

Project: U-5789

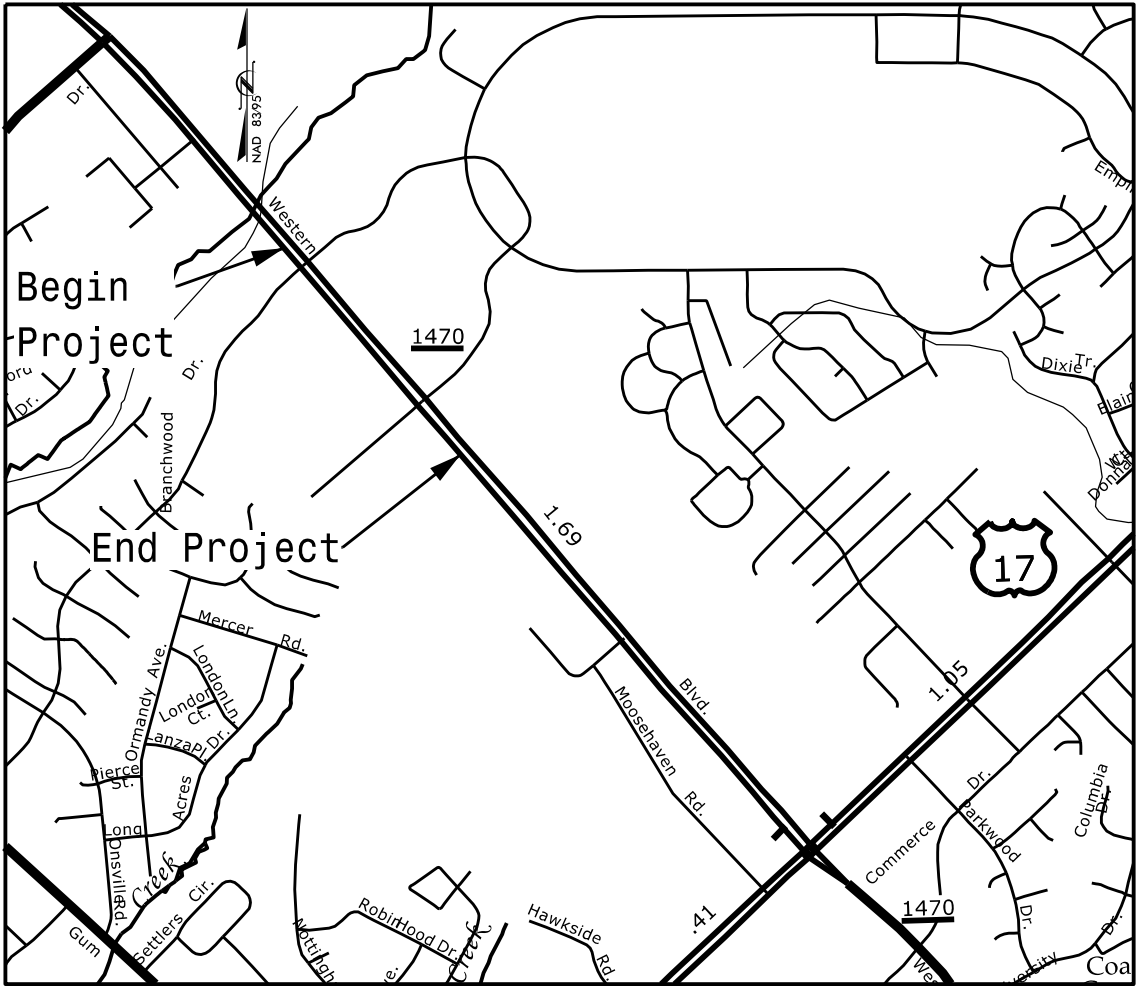
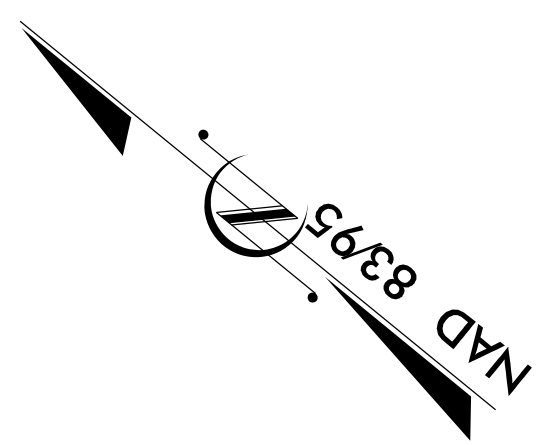
Contract: C205040

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

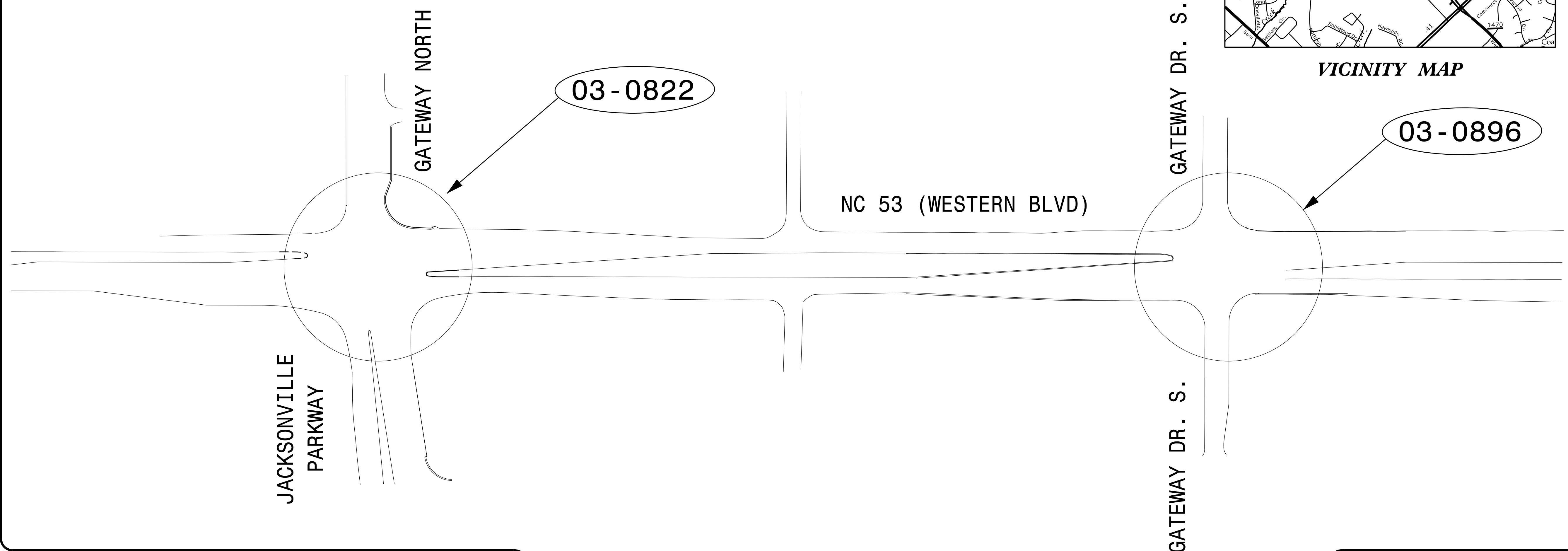
Project No.	Sheet No.
U-5789	Sig. A

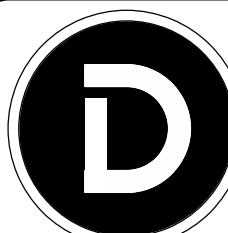
Onslow County

LOCATION: NC 53 (WESTERN BOULEVARD) AT
GATEWAY SOUTH TO
NC 53 (WESTERN BOULEVARD) AT
SR 2714 (JACKSONVILLE PARKWAY)/GATEWAY NORTH
TYPE OF WORK: TRAFFIC SIGNALS AND SIGNAL COMMUNICATIONS



VICINITY MAP





DAVENPORT

HOME OFFICE:
119 BROOKSTOWN AVENUE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportworld.com
NCBELS FIRM LICENSE NO. C-2522

03-XXXX Modified Signal

Refer to "Roadway Standard Drawings
NCDOT" dated January 2024 and
"Standard Specifications for Roads
and Structures" dated January 2024.

Index of Plans		
Sheet #	Reference #	Location/Description
Sig. A		
Sig. 1.0-2.7	03-0822	Title Sheet
Sig. 3.0 - 4.8	03-0896	NC 53 (Western Boulevard) at SR 2714 (Jacksonville Parkway)/Gateway North
SCP-1 - SCP-5		NC 53 (Western Boulevard) at Gateway South
		Communications Plan

TRANSPORTATION SYSTEMS MANAGEMENT &
OPERATIONS UNIT

Zachary Little, PE - Eastern Region Signals Engineer

Sarah G. Kirkpatrick, PE - Signal Equipment Design Engineer

Gregory A. Green - Signal Communications Project Engineer

Prepared for:
DIVISION OF HIGHWAYS
TRANSPORTATION MOBILITY AND SAFETY
DIVISION



750 N. Greenfield Parkway, Garner, NC 27529
Telephone: (919) 773-2800

PROJECT REFERENCE NO.	SHEET NO.
U-5789	Sig.1.0

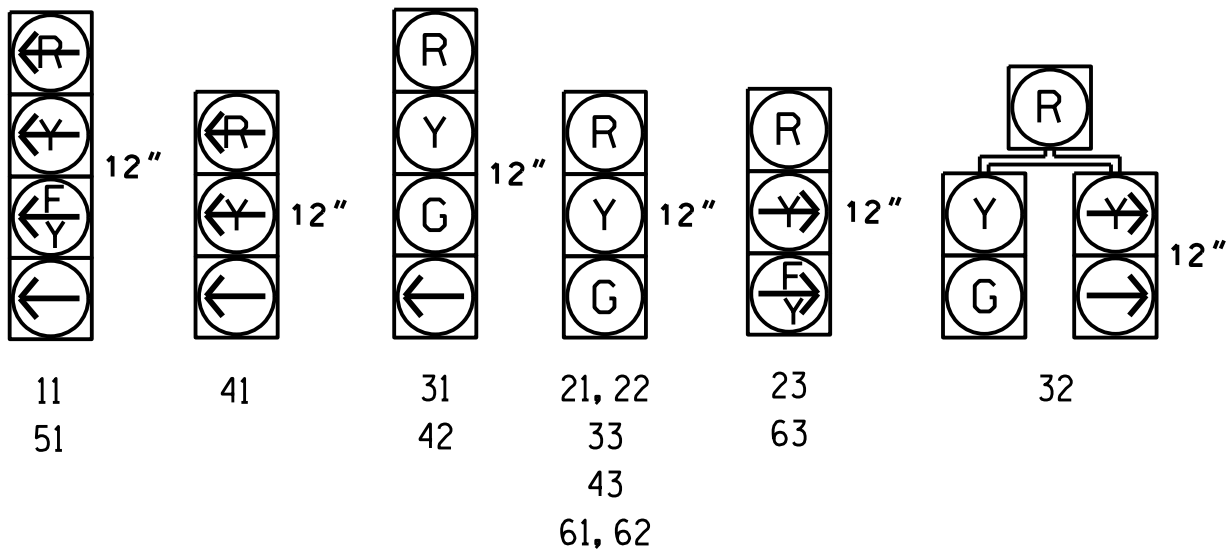
6 Phase
Fully Actuated
w/ EV Preempt
Jacksonville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024. "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or 5 may be lagged.
- The order of phase 3 and phase 4 may be reversed.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Pavement markings are existing unless otherwise shown.
- This intersection features an optical preemption system.Shown locations of optical detectors are conceptual only.
- This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- The Division (City) Traffic Engineer will determine the hours of use for each phasing plan.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Signal system data: Controller Asset # 0822.

SIGNAL FACE I.D.

All Heads L.E.D.



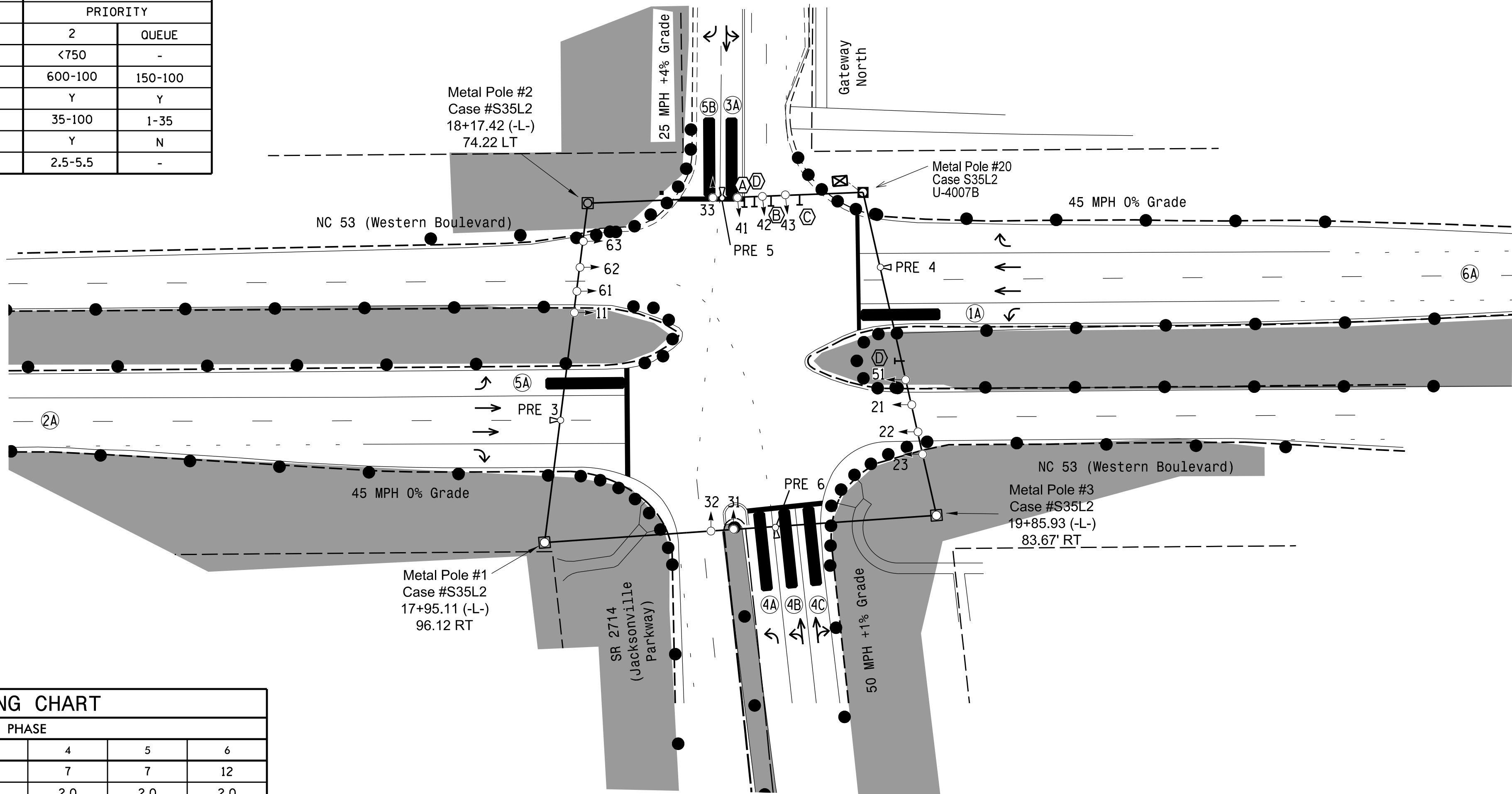
MICROWAVE DETECTION				
FUNCTION	Sensor 1(2A)		Sensor 2(6A)	
Channel	1		1	
Phase	2		6	
Direction of Travel	EB		WB	
Type	PRIORITY		PRIORITY	
Level	2	QUEUE	2	QUEUE
Discovery Zone(ft)	<750		<750	
Detection ZoneRange(ft)	600-100	150-100	600-100	150-100
Enable Speed	Y	Y	Y	Y
Speed Range (mph)	35-100	1-35	35-100	1-35
Enable Estimated Time of Arrival	Y	N	Y	N
Estimated Time of Arrival (sec)	2.5-5.5	-	2.5-5.5	-

2070 EV PREEMPTION				
FUNCTION	PRE 3	PRE 4	PRE 5	PRE 6
Interval 1 - Dwell Green	255	255	255	255
Interval 1 - Dwell Yellow	0.0*	0.0*	0.0*	0.0*
Interval 1 - Dwell Red	0.0*	0.0*	0.0*	0.0*
Interval 5 - Exit Green	1	1	1	1
Interval 5 - Yellow	0.0	0.0	0.0	0.0
Interval 5 - Red	0.0	0.0	0.0	0.0
Exit Phase(s)	2+6	2+6	3	4
Priority	Medium	Medium	Medium	Medium
Delay Time	0.0	0.0	0.0	0.0
Min Green Before Pre	1	1	1	1
Ped Clear Before Pre	0*	0*	0*	0*
Yellow Clear Before Pre	0.0*	0.0*	0.0*	0.0*
Red Clear Before Pre	0.0*	0.0*	0.0*	0.0*
Dwell Min Time	12	12	7	7
Enable Backup Protection	N	N	N	N
Ped Clear Through Yellow	N	N	N	N
Omit Overlaps	B	-	E	D
Preempt Extend**	2	2	2	2

* Time defaults to time used for phase during normal operation
** Program Timing on Detection Unit

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART											
INDUCTIVE LOOPS					DETECTOR PROGRAMMING						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP
1A	*	0	*	Y	1	Y	Y	-	-	#15	-
3A	*	0	*	Y	3	Y	Y	-	-	3	-
4A	*	0	*	Y	4	Y	Y	-	-	-	-
4B	*	0	*	Y	4	Y	Y	-	-	-	-
4C	*	0	*	Y	4	Y	Y	-	-	10	-
5A	*	0	*	Y	5	Y	Y	-	-	#15	-
5B	*	0	*	Y	5	Y	Y	-	-	15	-

* Multizone Microwave Detection
#Disable Delay During Alternate Phasing Operation.
**Disable Phase Call for Loops During Alternate Phasing.



OASIS 2070 TIMING CHART						
FEATURE	PHASE					
	1	2	3	4	5	6
Min Green 1 *	7	12	7	7	7	12
Extension 1	2.0	2.0	2.0	2.0	2.0	2.0
Max Green 1 *	20	90	30	30	20	90
Yellow Clearance	3.0	4.5	3.0	4.7	3.0	4.5
Red Clearance	3.7	2.2	3.5	2.0	3.7	2.2
Walk 1 *	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-
Seconds Per Actuation *	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW
Dual Entry	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

LEGEND

PROPOSED	EXISTING

Temporary Design;(TMP 4-5,10-11,16,19-20,25-26,31-32)
Signal Upgrade - Sheet 1 of 2

Project #: 230907

DAVENPORT

HOME OFFICE:
119 BROOKSTOWN AVENUE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportworld.com
NCBELS FIRM LICENSE NO. C-2522

Prepared for:
TRANSPORTATION MOBILITY AND SAFETY
DIVISION OF TRANSPORTATION
Signal Design Section

750 N. Greenfield Plwy, Garner, NC 27529

SCALE
0 40
1"=40'

NC 53 (Western Boulevard)
at
SR 2714 (Jacksonville Parkway)/
Gateway North

Division 3 Onslow County Jacksonville

PLAN DATE: May 2025 REVIEWED BY: L. Boyer

PREPARED BY: J. Dollarwhite RKA PROJ. NO.:

REVISIONS

INIT. DATE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL

NORTH CAROLINA
PROFESSIONAL
SEAL
030912
ENGINEER
LORI M. BOYER

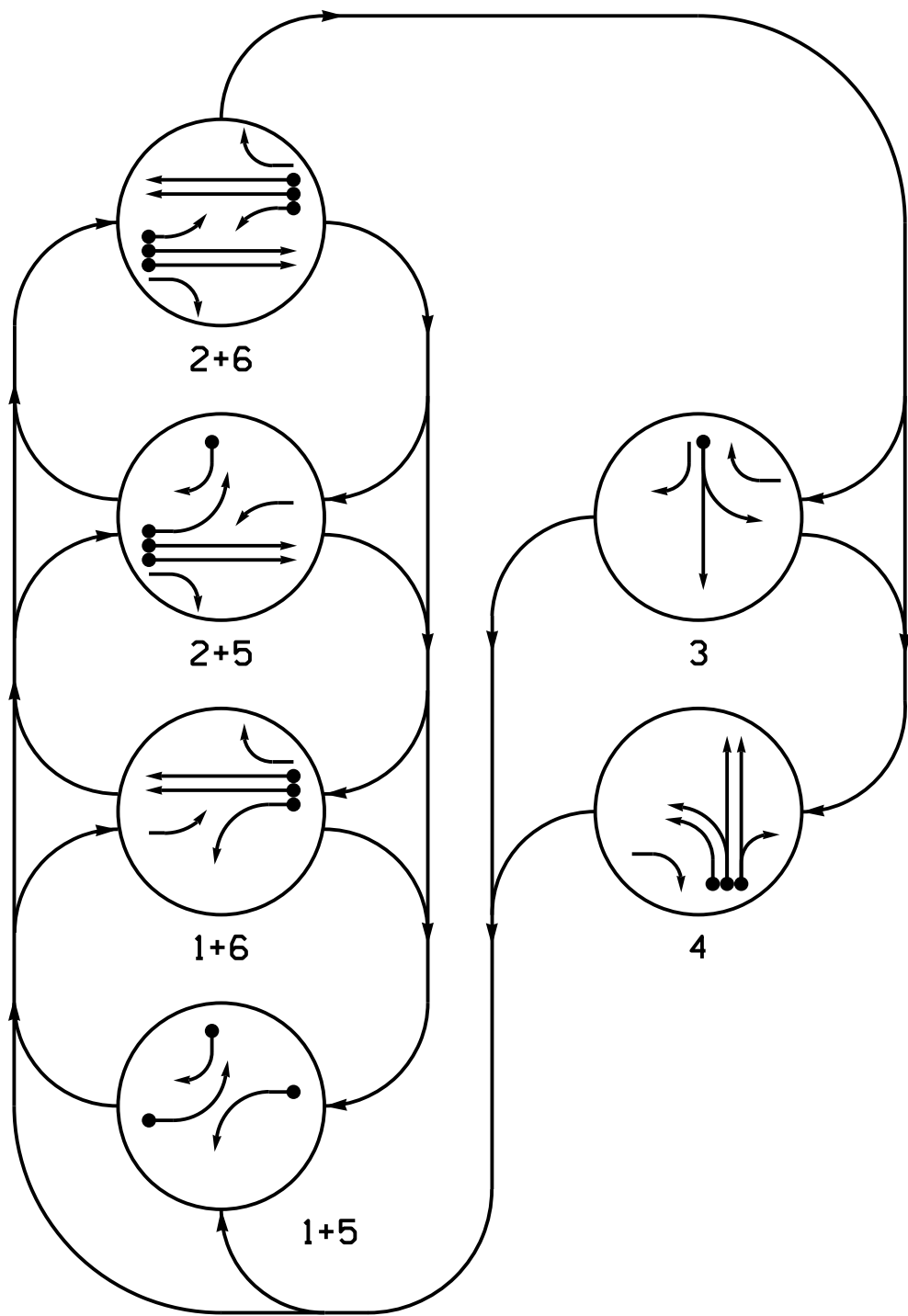
Signed by:
Lori M. Boyer 07/07/2025

SIGNATURE DATE

SIG. INVENTORY NO. 03-0822T

PROJECT REFERENCE NO.	SHEET NO.
U-5789	Sig.1.1

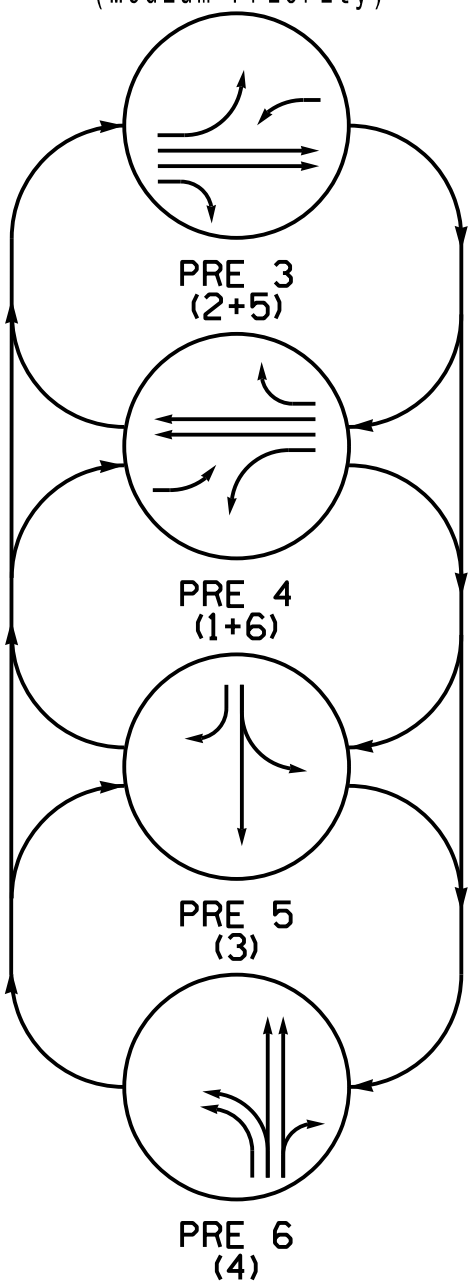
DEFAULT PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

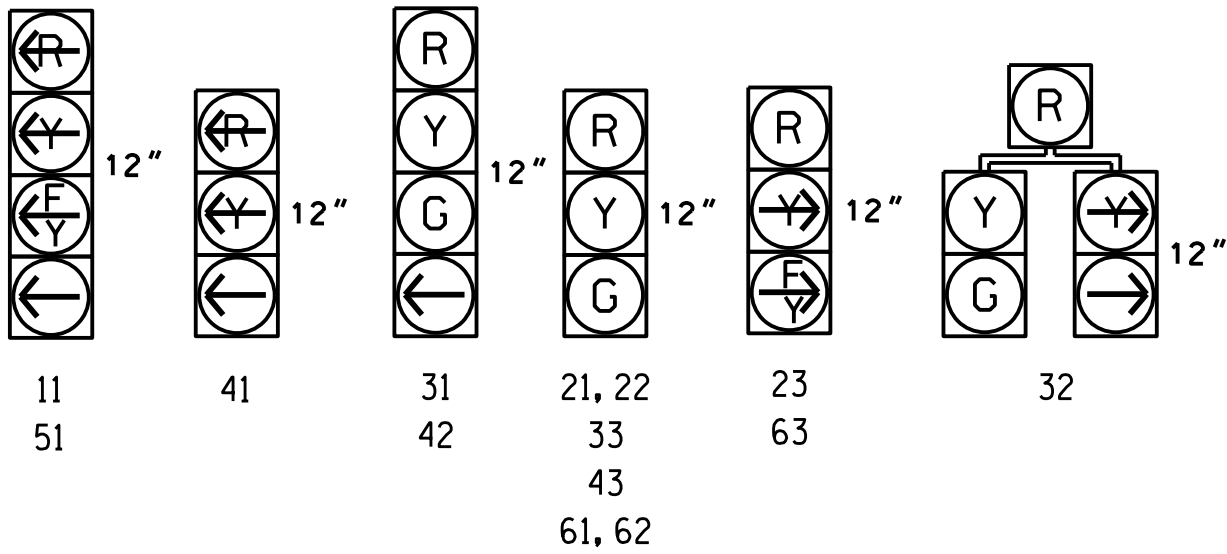
DEFAULT EV PREEMPT PHASES
(Medium Priority)



DEFAULT PHASING TABLE OF OPERATION		PHASE											
SIGNAL FACE	1 + 5	1 + 6	2 + 5	2 + 6	3	4	PRE 3	PRE 4	PRE 5	PRE 6	FLASH		
11	---	---	F	F	R	R	F	---	R	R	R		
21,22	R	R	G	G	R	R	G	R	R	R	R		
23	R	R	F	F	R	F	F	R	R	R	R		
31	R	R	R	R	G	R	R	R	G	R	R		
32	R	R	R	R	G	R	R	R	G	R	R		
33	R	R	R	R	G	R	R	R	G	R	R		
41	R	R	R	R	---	R	R	R	---	R	R		
42	R	R	R	R	R	G	R	R	R	G	R		
43	R	R	R	R	R	G	R	R	R	G	R		
51	---	F	---	F	R	R	---	F	R	R	R		
61,62	R	G	R	G	R	R	R	G	R	R	R		
63	R	F	R	F	R	R	F	R	R	R	R		

SIGNAL FACE I.D.

All Heads L.E.D.

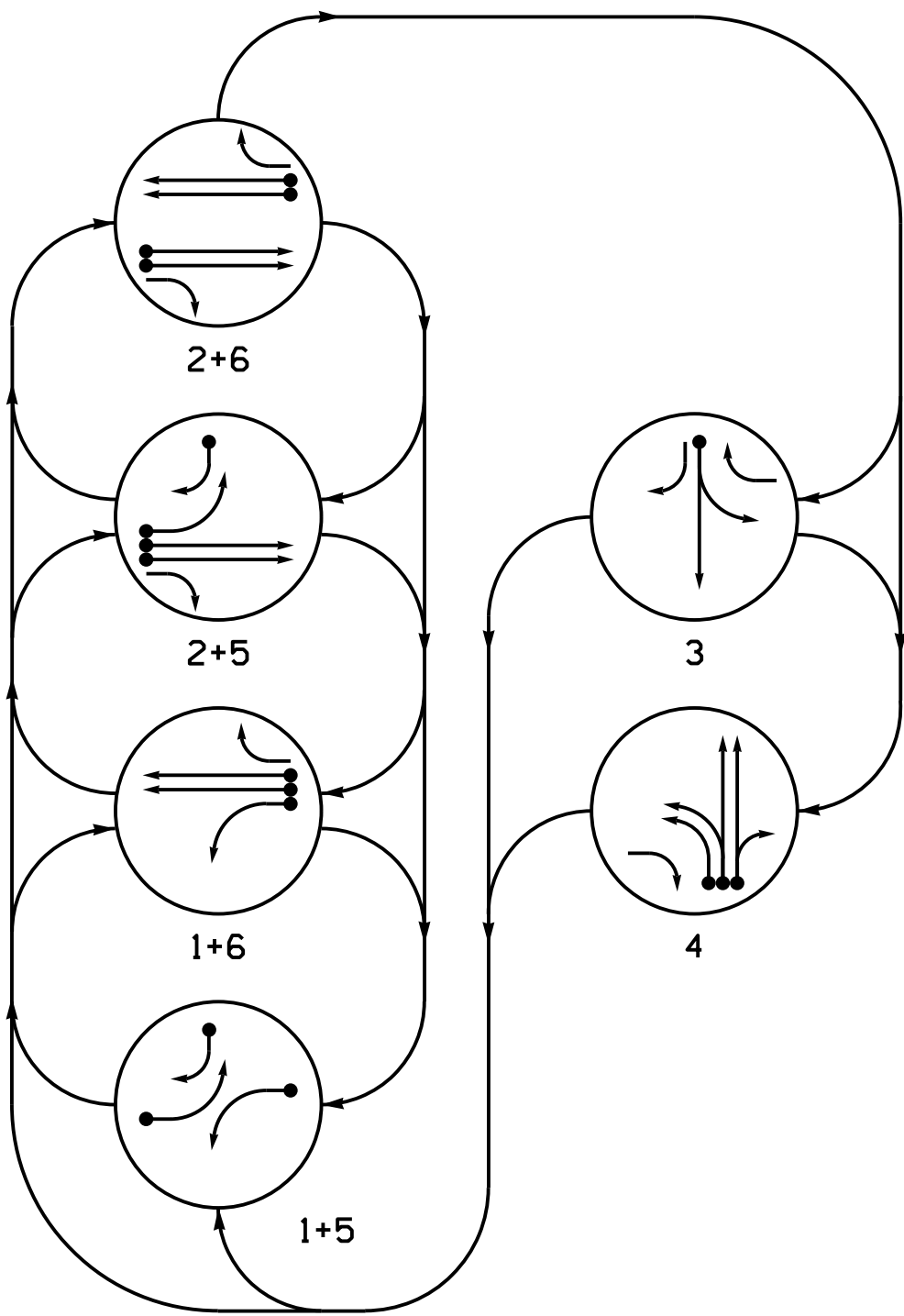


6 Phase
Fully Actuated
w/ EV Preempt
Jacksonville Signal System

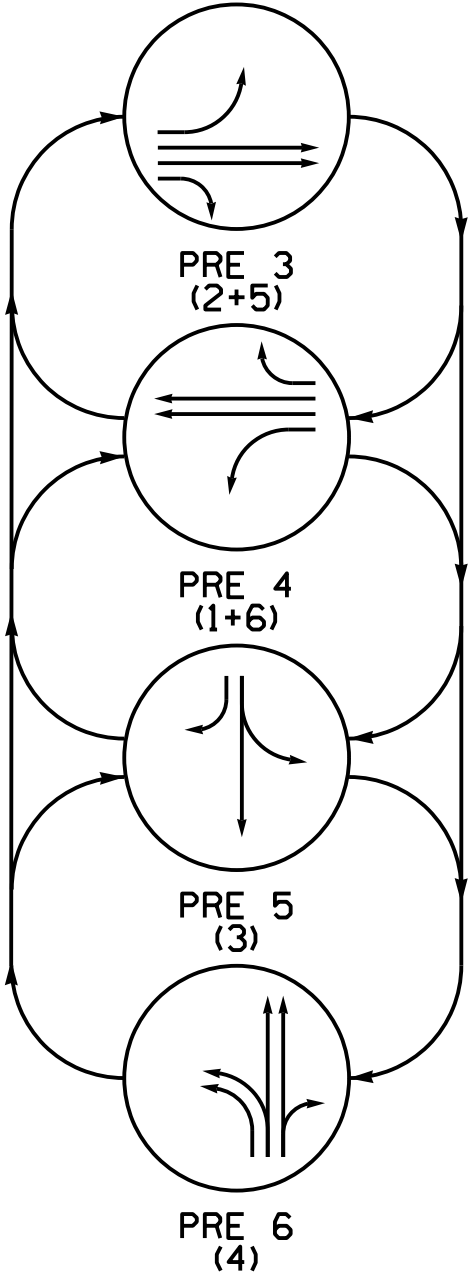
NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024, "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or 5 may be lagged.
- The order of phase 3 and phase 4 may be reversed.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Pavement markings are existing unless otherwise shown.
- This intersection features an optical preemption system.Shown locations of optical detectors are conceptual only.
- This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- The Division (City) Traffic Engineer will determine the hours of use for each phasing plan.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Signal system data: Controller Asset # 0822.

ALTERNATE PHASING DIAGRAM



ALTERNATE EV PREEMPT PHASES
(Medium Priority)



ALTERNATE PHASING TABLE OF OPERATION		PHASE											
SIGNAL FACE	1 + 5	1 + 6	2 + 5	2 + 6	3	4	PRE 3	PRE 4	PRE 5	PRE 6	FLASH		
11	---	---	R	R	R	R	---	R	R	R	R		
21,22	R	R	G	G	R	R	G	R	R	R	R		
23	R	R	F	F	R	F	F	R	R	R	R		
31	R	R	R	R	G	R	R	R	G	R	R		
32	R	R	R	R	G	R	R	R	G	R	R		
33	R	R	R	R	G	R	R	R	G	R	R		
41	R	R	R	R	---	R	R	R	---	R	R		
42	R	R	R	R	R	G	R	R	R	G	R		
43	R	R	R	R	R	G	R	R	R	G	R		
51	---	R	---	R	R	R	---	R	R	R	R		
61,62	R	G	R	G	R	R	R	G	R	R	R		
63	R	F	R	F	R	R	F	R	R	R	R		

Temporary Design;(TMP 4-5,10-11,16,19-20,25-26,31-32)
Signal Upgrade - Sheet 2 of 2

Project #: 230907

DAVENPORT

HOME OFFICE:
119 BROOKSTOWN AVENUE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportworld.com
NCBELS FIRM LICENSE NO. C-2522

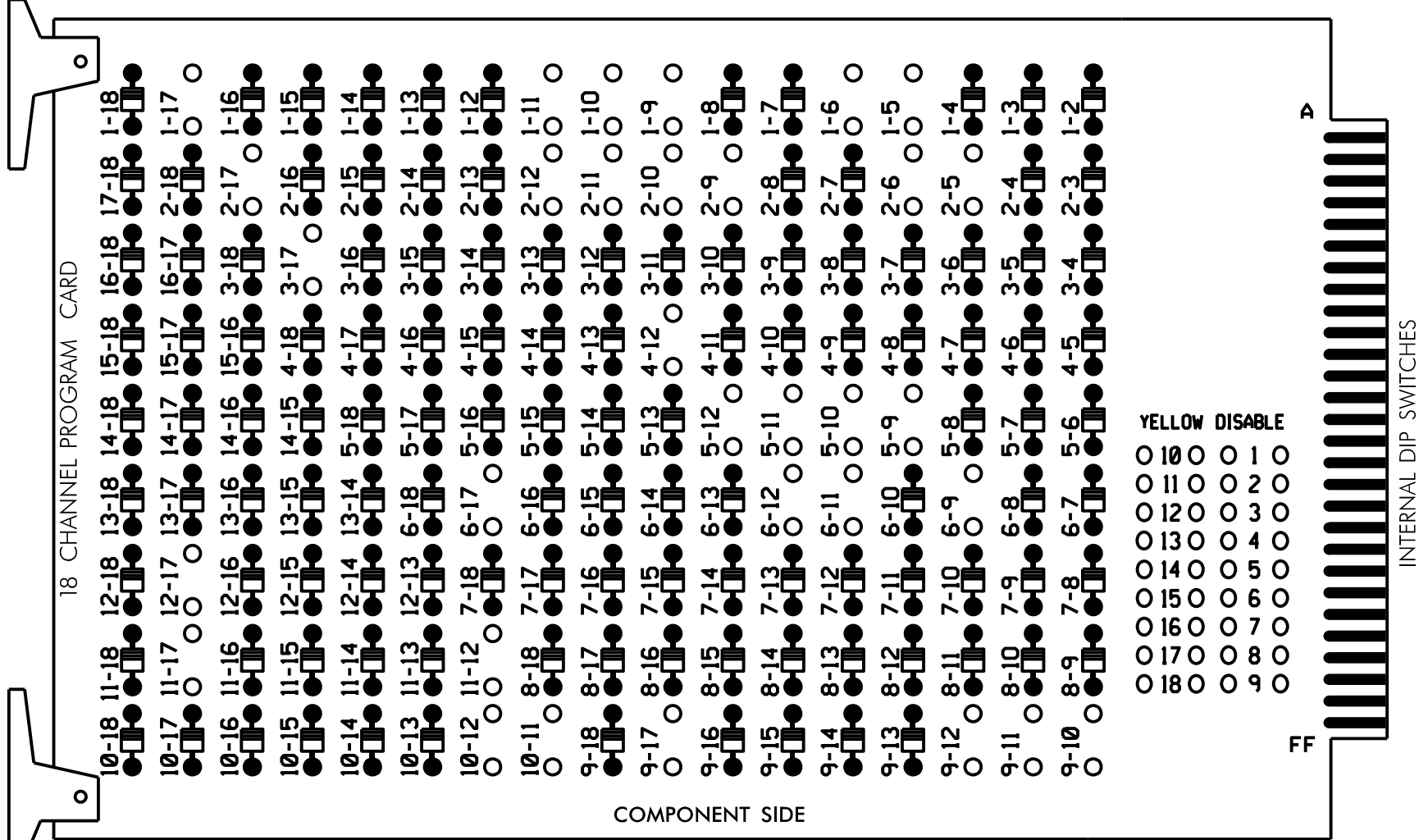
	NC 53 (Western Boulevard) at SR 2714 (Jacksonville Parkway)/ Gateway North		
	Division 3	Onslow County Jacksonville	
PLAN DATE: May 2025	REVIEWED BY: L. Boyer	PREPARED BY: J. Dollarhite RKA PROJ. NO.:	
REVISIONS		INIT.	DATE
SIGNATURE		DATE	
SIG. INVENTORY NO. 03-0822T			

18 CHANNEL IP CONFLICT MONITOR

PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-10, 1-11, 1-17, 2-5, 2-6, 2-9, 2-10, 2-11, 2-12, 2-17, 3-17, 4-12, 5-9, 5-10, 5-11, 5-12, 6-9, 6-11, 6-12, 6-17, 9-10, 9-11, 9-12, 9-17, 10-11, 10-12, 11-12, 11-17 AND 12-17.



REMOVE JUMPERS AS SHOWN

NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
- Ensure that Red Enable is active at all times during normal operation.
- Integrate monitor with Ethernet network in cabinet.

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Enable Simultaneous Gap-Out for all phases.
- Disable all phases for Startup in Green and Yellow Flash.
- Program phases 2 and 6 as First Phases.
- Program overlaps 1 and 5 as Wag Overlaps.
- The cabinet and controller are part of the Jacksonville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S4,S5,S7,S8,AUX S1,AUX S2,AUX S3,
AUX S4,AUX S5
PHASES USED.....1,2,3,4,5,6
OVERLAP "A".....1+2
OVERLAP "B".....5
OVERLAP "C".....5+6
OVERLAP "D".....2+4
OVERLAP "E".....3+6

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5			S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMJ CHANNEL NO.	1	2	13	3	4			14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4			4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	* OLE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11★	21,22	NU	31	32,33	41	42	43	NU	51★	61,62	NU	NU	NU	11★	32	63★	51★	23★	NU
RED		128		116	116		101	101			134					*	A111		A101	
YELLOW	*	129		117	117		102	102		*	135									
GREEN		130		118	118		103	103			136									
RED ARROW						101									A121			A114		
YELLOW ARROW						102									A122	A125	A112	A115	A102	
FLASHING YELLOW ARROW															A123		A113	A116	A103	
GREEN ARROW	127			118		103	103			133						A126				

NU = Not Used

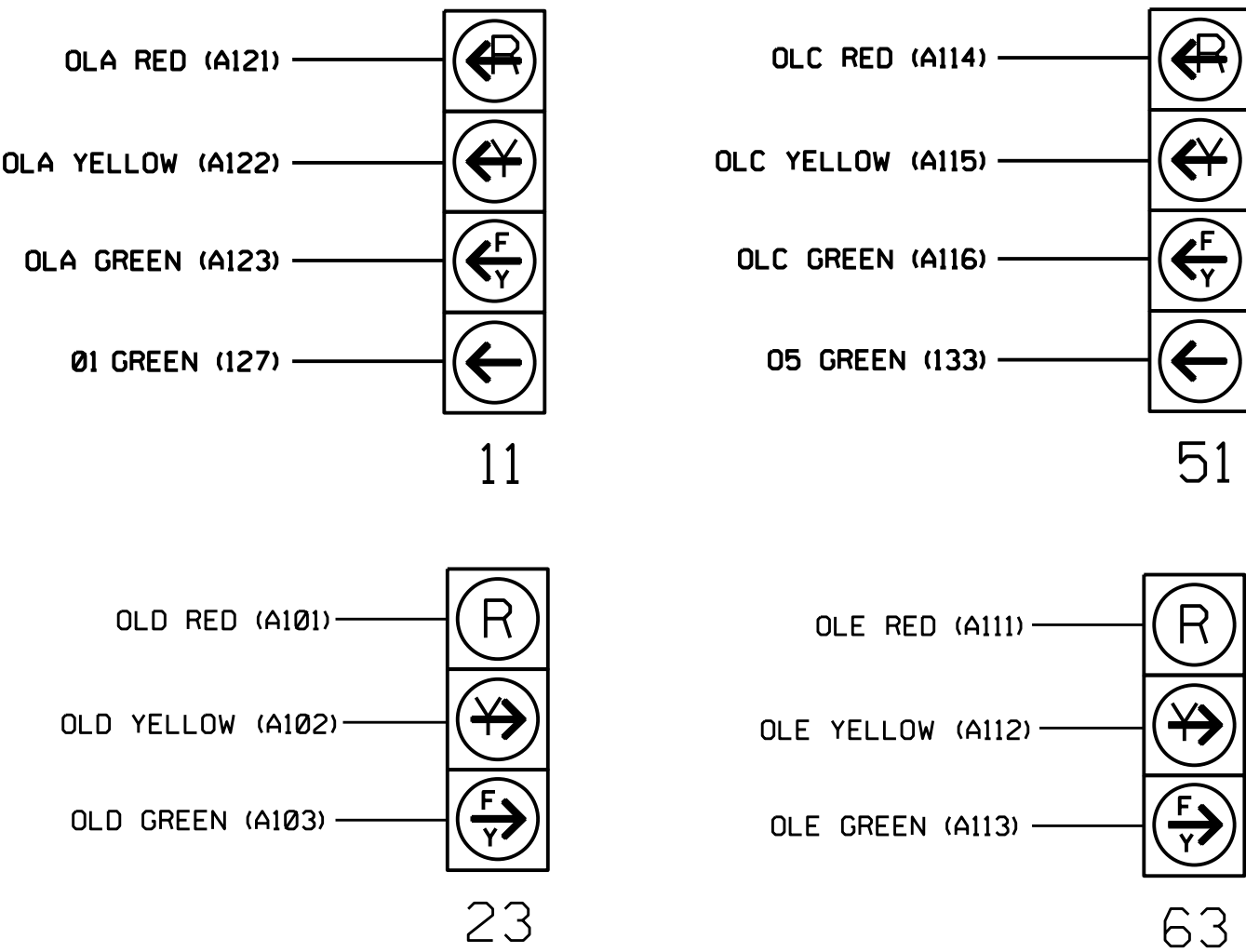
★ See pictorial of head wiring in detail below.

* Denotes install load resistor. See load resistor installation detail this sheet.

** Requires special programming and output remapping. See sheet 6.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)

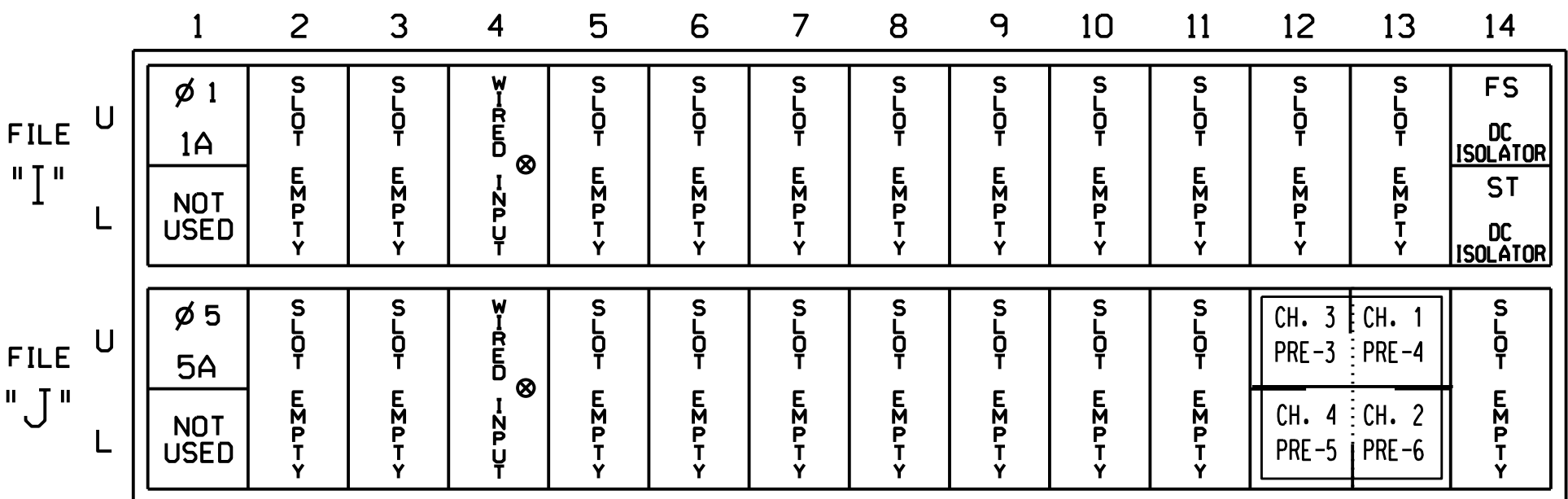


NOTE

The sequence display for signal heads 11 and 51 requires special logic programming. See sheet 2 for programming instructions.

INPUT FILE POSITION LAYOUT

(front view)



EX.: 1A, 2A, ETC. = LOOP NO.'S

⊗ Wired Input - Do not populate slot with detector card

↑ FS = FLASH SENSE
ST = STOP TIME
PRE = PREEMPTS

4 CHANNEL TOMAR OSP CARD
INSERT CARD INTO
SLOT J13

NOTE: SEE TYPICAL
TOMAR FIELD
WIRE DETAIL
ON SHEET 5.

INPUT FILE CONNECTION & PROGRAMMING CHART

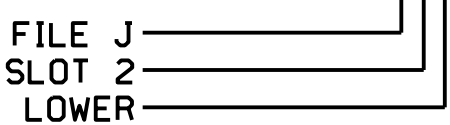
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A ¹	TB2-1,2	11U	56	18	1	1	Y	Y			15
	-	J4U	48	10★	26	6	Y	Y			
	-	11U	56	18★	51	1	Y	Y			
5A ²	TB3-1,2	J1U	55	17	5	5	Y	Y			15
	-	14U	47	9★	22	2	Y	Y			
	-	J1U	55	17★	55	5	Y	Y			

¹Add jumper from 11-W to J4-W. on rear of input file.

²Add jumper from J1-W to 14-W. on rear of input file.

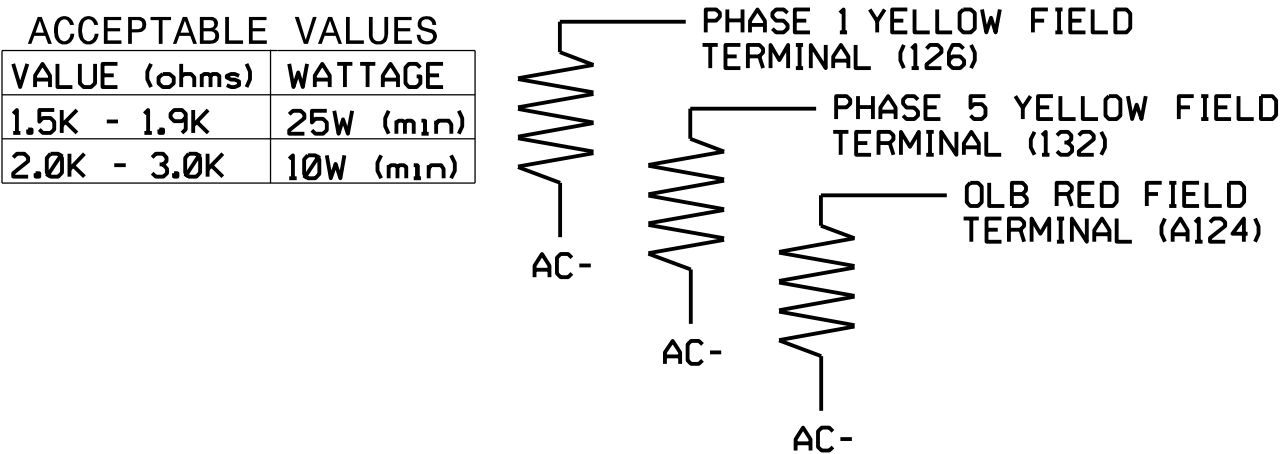
*See Input Page Assignment programming detail on sheets 3 and 4.

INPUT FILE POSITION LEGEND: J2L



LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)



SPECIAL DETECTOR NOTE

Install a multizone microve detection zone for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

For detection zones 1A and 5A, the equipment placement and slots reserved for wired inputs are typical for a NCDOT installation. Inputs associated with these slots are compatible with time of day instructions located on sheets 3 and 4 of this electrical detail.

PROJECT REFERENCE NO.	SHEET NO.
U-5789	Sig-1.2

Project #: 230907

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0822T
DESIGNED: May 2025
SEALED: 07/07/2025
REVISED: N/A

DAVENPORT
HOME OFFICE:
119 BROOKSTOWN AVENUE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportworld.com
NCBELS FIRM LICENSE NO. C-2822

Temporary Design; (TMP 4-5,10-11,16,19-20,25-26,31-32)
Electrical Detail - Sheet 1 of 6

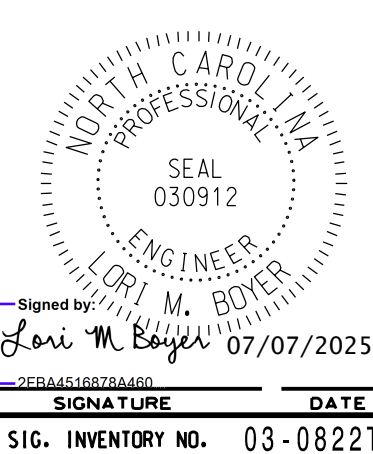
ELECTRICAL AND PROGRAMMING
DETAILS FOR:



NC 53 (Western Boulevard)
at
SR 2714 (Jacksonville Parkway)/
Gateway North
Division 3 Onslow County Jacksonville
PLAN DATE: May 2025 REVIEWED BY: L. Boyer
PREPARED BY: J Dollarhite RKA PROJ. NO.:
REVISIONS
INIT. DATE
SIGNATURE DATE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL



SIG. INVENTORY NO. 03-0822T

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL
TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, 3, 4, 5 AND 6.
2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

LOGICAL I/O COMMAND #1 (+/-COMMAND#)
IF ACTIVE PHASE #1 IS ON
AND RED CLEAR ON PHASE #1 IS ON

SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #50 ON
SET OUTPUT ASSIGNMENT #51 OFF

PRESS '+'

NOTE: LOGIC FOR PHASE 1 RED CLEAR WHEN TRANSITIONING FROM PHASE 1 TO PHASE 2 (HEAD 11).

LOGICAL I/O COMMAND #2 (+/-COMMAND#)
IF ACTIVE PHASE #1 IS ON

SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #52 OFF

PRESS '+'

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 1 (HEAD 11).

LOGICAL I/O COMMAND #3 (+/-COMMAND#)
IF YELLOW ON PHASE #1 IS ON

SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #51 ON

PRESS '+'

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 1 (HEAD 11).

LOGICAL I/O COMMAND #4 (+/-COMMAND#)
IF ACTIVE PHASE #5 IS ON
AND RED CLEAR ON PHASE #5 IS ON

SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #42 ON
SET OUTPUT ASSIGNMENT #43 OFF

PRESS '+'

NOTE: LOGIC FOR PHASE 5 RED CLEAR WHEN TRANSITIONING FROM PHASE 5 (HEAD 51).

LOGICAL I/O COMMAND #5 (+/-COMMAND#)
IF ACTIVE PHASE #5 IS ON

SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #44 OFF

PRESS '+'

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 5 (HEAD 51).

LOGICAL I/O COMMAND #6 (+/-COMMAND#)
IF YELLOW ON PHASE #5 IS ON

SCROLL DOWN

THEN:
SET OUTPUT ASSIGNMENT #43 ON

PRESS '+'

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 5 (HEAD 51).

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

OUTPUT 42 = Overlap C Red
OUTPUT 43 = Overlap C Yellow
OUTPUT 44 = Overlap C Green
OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

EMERGENCY VEHICLE PREEMPTION
PROGRAMMING DETAIL

(program controller as shown below)

From Main Menu press 'A' (Preemption), then '1' (Standard Preemptions). Press 'NEXT' as needed to advance to Preempts 3,4,5 and 6.

PREEMPTION #3	SETTINGS (NEXT:1-10)
INTERVAL/TIMING	CLEAR/DWELL PHASES
GRN YEL RED	12345678910111213141516
1 255 0.0 0.0	X X
2 0 0.0 0.0	
3 0 0.0 0.0	
4 0 0.0 0.0	
5 1 0.0 0.0	X X

EXIT CALLS

OPTIONS

PRIORITY (Y/N TO SELECT)MED

DELAY TIMER (0-255 SEC)0

MIN GREEN BEFORE PRE (0= DEFAULT)....1

PED CLEAR BEFORE PRE (0= DEFAULT)....0

YELLOW CLEAR BEFORE PRE (0= DEFAULT)....0.0

RED CLEAR BEFORE PRE (0= DEFAULT)....0.0

DWELL MIN TIMER (0-255 SEC)12

DWELL MAX TIMER (0=OFF,1-255MIN)2

DWELL HOLD-OVER TIMER (0-255)0

LATCH CALL?N

LINK TO NEXT PREEMPT?N

ENABLE BACKUP PROTECTION?N

HOLD CLEAR 1 PHASES DURING DELAY? ...N

FAST GREEN FLASH DWELL PHASES?N

PED CLEARANCE THROUGH YELLOW?N

INHIBIT OVERLAP GREEN EXTENSION? ...N

SERVICE DURING SOFTWARE FLASH?N

REST IN RED DURING DWELL INTERVAL? ..N

FLASH DWELL INTERVAL?N

ALLOW PEDS IN DWELL INTERVAL?N

RE-TIME DWELL INTERVAL?N

OVERLAPS: ABCDEFGHIJKLMNOP

DWELL INT FLASH YELLOW OMIT OVERLAPS: X

PRESS 'NEXT'

PREEMPTION #4	SETTINGS (NEXT:1-10)
INTERVAL/TIMING	CLEAR/DWELL PHASES
GRN YEL RED	12345678910111213141516
1 255 0.0 0.0	X X
2 0 0.0 0.0	
3 0 0.0 0.0	
4 0 0.0 0.0	
5 1 0.0 0.0	X X

EXIT CALLS

OPTIONS

PRIORITY (Y/N TO SELECT)MED

DELAY TIMER (0-255 SEC)0

MIN GREEN BEFORE PRE (0= DEFAULT)....1

PED CLEAR BEFORE PRE (0= DEFAULT)....0

YELLOW CLEAR BEFORE PRE (0= DEFAULT)....0.0

RED CLEAR BEFORE PRE (0= DEFAULT)....0.0

DWELL MIN TIMER (0-255 SEC)12

DWELL MAX TIMER (0=OFF,1-255MIN)2

DWELL HOLD-OVER TIMER (0-255)0

LATCH CALL?N

LINK TO NEXT PREEMPT?N

ENABLE BACKUP PROTECTION?N

HOLD CLEAR 1 PHASES DURING DELAY? ...N

FAST GREEN FLASH DWELL PHASES?N

PED CLEARANCE THROUGH YELLOW?N

INHIBIT OVERLAP GREEN EXTENSION? ...N

SERVICE DURING SOFTWARE FLASH?N

REST IN RED DURING DWELL INTERVAL? ..N

FLASH DWELL INTERVAL?N

ALLOW PEDS IN DWELL INTERVAL?N

RE-TIME DWELL INTERVAL?N

OVERLAPS: ABCDEFGHIJKLMNOP

DWELL INT FLASH YELLOW OMIT OVERLAPS:

PRESS 'NEXT'

PREEMPTION #5	SETTINGS (NEXT:1-10)
INTERVAL/TIMING	CLEAR/DWELL PHASES
GRN YEL RED	12345678910111213141516
1 255 0.0 0.0	X
2 0 0.0 0.0	
3 0 0.0 0.0	
4 0 0.0 0.0	
5 1 0.0 0.0	X

EXIT CALLS

OPTIONS

PRIORITY (Y/N TO SELECT)MED

DELAY TIMER (0-255 SEC)0

MIN GREEN BEFORE PRE (0= DEFAULT)....1

PED CLEAR BEFORE PRE (0= DEFAULT)....0

YELLOW CLEAR BEFORE PRE (0= DEFAULT)....0.0

RED CLEAR BEFORE PRE (0= DEFAULT)....0.0

DWELL MIN TIMER (0-255 SEC)7

DWELL MAX TIMER (0=OFF,1-255MIN)2

DWELL HOLD-OVER TIMER (0-255)0

LATCH CALL?N

LINK TO NEXT PREEMPT?N

ENABLE BACKUP PROTECTION?N

HOLD CLEAR 1 PHASES DURING DELAY? ...N

FAST GREEN FLASH DWELL PHASES?N

PED CLEARANCE THROUGH YELLOW?N

INHIBIT OVERLAP GREEN EXTENSION? ...N

SERVICE DURING SOFTWARE FLASH?N

REST IN RED DURING DWELL INTERVAL? ..N

FLASH DWELL INTERVAL?N

ALLOW PEDS IN DWELL INTERVAL?N

RE-TIME DWELL INTERVAL?N

OVERLAPS: ABCDEFGHIJKLMNOP

DWELL INT FLASH YELLOW OMIT OVERLAPS: X

PRESS 'NEXT'

PREEMPTION #6	SETTINGS (NEXT:1-10)
INTERVAL/TIMING	CLEAR/DWELL PHASES
GRN YEL RED	12345678910111213141516
1 255 0.0 0.0	X
2 0 0.0 0.0	
3 0 0.0 0.0	
4 0 0.0 0.0	
5 1 0.0 0.0	X

EXIT CALLS

OPTIONS

PRIORITY (Y/N TO SELECT)MED

DELAY TIMER (0-255 SEC)0

MIN GREEN BEFORE PRE (0= DEFAULT)....1

PED CLEAR BEFORE PRE (0= DEFAULT)....0

YELLOW CLEAR BEFORE PRE (0= DEFAULT)....0.0

RED CLEAR BEFORE PRE (0= DEFAULT)....0.0

DWELL MIN TIMER (0-255 SEC)7

DWELL MAX TIMER (0=OFF,1-255MIN)2

DWELL HOLD-OVER TIMER (0-255)0

LATCH CALL?N

LINK TO NEXT PREEMPT?N

ENABLE BACKUP PROTECTION?N

HOLD CLEAR 1 PHASES DURING DELAY? ...N

FAST GREEN FLASH DWELL PHASES?N

PED CLEARANCE THROUGH YELLOW?N

INHIBIT OVERLAP GREEN EXTENSION? ...N

SERVICE DURING SOFTWARE FLASH?N

REST IN RED DURING DWELL INTERVAL? ..N

FLASH DWELL INTERVAL?N

ALLOW PEDS IN DWELL INTERVAL?N

RE-TIME DWELL INTERVAL?N

OVERLAPS: ABCDEFGHIJKLMNOP

DWELL INT FLASH YELLOW OMIT OVERLAPS: X

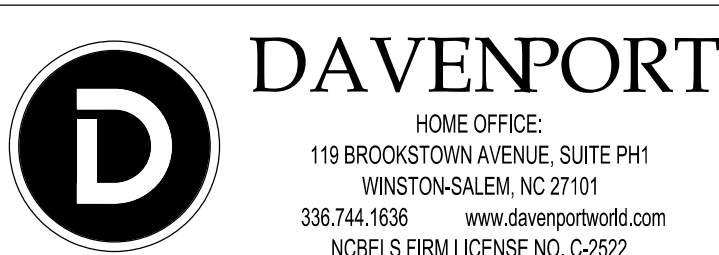
PROGRAMMING COMPLETE

Program extend time detector unit for 2.0 seconds.

Temporary Design;(TMP 4-5,10-11,16,19-20,25-26,31-32)
Electrical Detail - Sheet 2 of 6

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0822T
DESIGNED: April 2025
SEALED: 07/07/2025
REVISED: N/A

Project #: 230907



ELECTRICAL AND PROGRAMMING DETAILS FOR:		NC 53 (Western Boulevard) at SR 2714 (Jacksonville Parkway)/ Gateway North		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Division 3 Onslow County Jacksonville		Division 3 Onslow County Jacksonville		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030912 LORI M. BOYER Signed by: Lori M. Boyer 07/07/2025	
PLAN DATE: April 2025	REVIEWED BY: L. Boyer	PREPARED BY: J Dollarhite	RKA PROJ. NO.:	22-BAA516878A60	
REVISIONS		INIT.	DATE	SIGNATURE DATE	
				SIG. INVENTORY NO. 03-0822T	

(program controller as shown below)

2. THE FIRST TASK THIS PROGRAMMING ACCOMPLISHES IS THE DISABLING OF INPUT #10 (DETECTOR 26) SO THAT A VEHICLE CALL WILL NOT BE PLACED TO PHASE 6 DURING ALTERNATE PHASING OPERATION. THE SECOND TASK THIS PROGRAMMING ACCOMPLISHES IS THAT IT REASSIGNS DETECTOR 51 TO INPUT #18 SO THAT THE DELAY ON LOOP 1A CAN BE REDUCED FROM 15 SECONDS TO 0 SECONDS.

```

PAGE: 2 C1 PIN:48 VEHICLE DETECTOR
INPUT ASSIGNMENT #.....10
DEBOUNCE TIME (0-25.5 SEC).....0.5
DELAY TIME (0-25.5 SEC).....0.0
HOLD-OVER TIME (0-25.5 SEC).....0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N).....Y
VEHICLE DETECTOR (1-64).....26
PEDESTRIAN DETECTOR (1-16).....
ALTERNATE PED DETECTOR (1-16).....
PREEMPT (1-10).....
INVERTED PREEMPT (1-10).....
STOP TIME (Y/N).....
FLASH SENSE (Y/N).....
DOOR OPEN (Y/N).....
MANUAL CONTROL ENABLE (Y/N).....
MANUAL CONTROL ADVANCE (Y/N).....
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4).....
HOLD PHASES (1-16).....
PLAN (65-FLASH,66=FREE)..... OFFSET#.....
CHANGE PHASE SEQUENCE PAGE (1-12)....
CHANGE PHASE TIMING PAGE (1-4).....
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)....
CHANGE INPUT PAGE (1-4).....
CHANGE OUTPUT PAGE (1-4).....
OVERRIDE PHASE CONTROL FUNCTION (Y)....

```

DEFAULT DETECTOR NUMBER WILL REMAIN
UNTIL 'NOT ENABLED' IS ENTERED.

(LOOP 1A - PHASE 6)

```

PAGE: 2 C1 PIN:48 NOT ENABLED
INPUT ASSIGNMENT #.....0
DEBOUNCE TIME (0-25.5 SEC).....0.5
DELAY TIME (0-25.5 SEC).....0.0
HOLD-OVER TIME (0-25.5 SEC).....0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N).....Y
-----
VEHICLE DETECTOR (1-64).....-
PEDESTRIAN DETECTOR (1-16).....-
ALTERNATE PED DETECTOR (1-16).....-
PREEMPT (1-10).....-
INVERTED PREEMPT (1-10).....-
STOP TIME (Y/N).....-
FLASH SENSE (Y/N).....-
DOOR OPEN (Y/N).....-
MANUAL CONTROL ENABLE (Y/N).....-
MANUAL CONTROL ADVANCE (Y/N).....-
SPECIAL FUNCTION ALARM (1-8).....-
TOD HOUR SYNCHRONIZATION (0-23).....-
FORCE OFF RING (1-4).....-
HOLD PHASES (1-16).....-
PLAN (65=FLSH,66=FREE).....- OFFSET#..-
CHANGE PHASE SEQUENCE PAGE (1-12).....-
CHANGE PHASE TIMING PAGE (1-4).....-
CHANGE PHASE CONTROL PAGE (1-4).....-
CHANGE OVERLAP CONTROL PAGE (1-4).....-
CHANGE INPUT PAGE (1-4).....-
CHANGE OUTPUT PAGE (1-4).....-
OVERRIDE PHASE CONTROL FUNCTION (Y).....-

```

PRESS '+' TO ADVANCE TO INPUT 18

```

PAGE: 2 C1 PIN:56 VEHICLE DETECTOR
INPUT ASSIGNMENT #.....18
DEBOUNCE TIME (0-25.5 SEC).....0.5
DELAY TIME (0-25.5 SEC).....0.0
HOLD-OVER TIME (0-25.5 SEC).....0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N).....
VEHICLE DETECTOR (1-64).....1
PEDESTRIAN DETECTOR (1-16).....
ALTERNATE PED DETECTOR (1-16).....
PREEMPT (1-10).....
INVERTED PREEMPT (1-10).....
STOP TIME (Y/N).....
FLASH SENSE (Y/N).....
DOOR OPEN (Y/N).....
MANUAL CONTROL ENABLE (Y/N).....
MANUAL CONTROL ADVANCE (Y/N).....
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4).....
HOLD PHASES (1-16).....
PLAN (65=F,LSH,66=FREE)..... OFFSET#.....
CHANGE PHASE SEQUENCE PAGE (1-12).....
CHANGE PHASE TIMING PAGE (1-4).....
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4).....
CHANGE INPUT PAGE (1-4).....
CHANGE OUTPUT PAGE (1-4).....
OVERRIDE PHASE CONTROL FUNCTION (Y).....

```

(LOOP 1A - PHASE 1)

```

PAGE 2 CYPIN:56 VEHICLE DETECTOR
INPUT ASSIGNMENT #.....18
DEBOUNCE TIME (0-25.5 SEC).....0.5
DELAY TIME (0-25.5 SEC).....0.0
HOLD-OVER TIME (0-25.5 SEC).....0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N).....
VEHICLE DETECTOR (1-64).....51
PEDESTRIAN DETECTOR (1-16).....
ALTERNATE PED DETECTOR (1-16).....
PREEMPT (1-10).....
INVERTED PREEMPT (1-10).....
STOP TIME (Y/N).....
FLASH SENSE (Y/N).....
DOOR OPEN (Y/N).....
MANUAL CONTROL ENABLE (Y/N).....
MANUAL CONTROL ADVANCE (Y/N).....
SPECIAL FUNCTION ALARM (1-8).....
TOD HOUR SYNCHRONIZATION (0-23).....
FORCE OFF RING (1-4).....
HOLD PHASES (1-16).....
PLAN (65=F,LSH,66=F,REE)..... OFFSET#.....
CHANGE PHASE SEQUENCE PAGE (1-12).....
CHANGE PHASE TIMING PAGE (1-4).....
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4).....
CHANGE INPUT PAGE (1-4).....
CHANGE OUTPUT PAGE (1-4).....
OVERRIDE PHASE CONTROL FUNCTION (Y).....

```

PROGRAMMING COMPLETE

(program controller as shown below)

```

VEHICLE DETECTOR #51  SETTINGS (+,-1-64)
SETTING:                (Y/N)
ENABLE DETECTOR.....N
ENABLE LOGGING.....N
ENABLE DIAGNOSTICS.....N
SPEED TRAP.....N
CALL DETECTOR.....Y
EXTENSION DETECTOR.....Y
MODE 2 STOP BAR.....N
SWITCHING DETECTOR.....N
DUPLICATING DETECTOR.....N
ENABLE FULL TIME DELAY.....N
IF FAILED, SET MIN RECALL?.....N
IF FAILED, SET MAX1 RECALL?.....N
IF FAILED, SET MAX2 RECALL?.....N
PHASE#                ;12345678910111213141516
PHASES ASSIGNED ;
SWITCH/DUPLICATE ;
LOOP SIZE (0-255 FT).....6
SPEED TRAP DISTANCE (0-255 FT).....0
STOP BAR TIME (0-255 SEC).....0
STRETCH (0-25.5 SEC).....0.0
DELAY (0-255 SEC).....0
MAX CALLS/YMIN (0-255).....255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).....0
MAX OCCUPANCY (0-100%).....100
EXTENSION DISABLE TIME (0-255 SEC).....0
QUEUE MAX OCCUPANCY TIME (0-255).....0
QUEUE GAP RESET TIME (0-25.5).....0.0
PREEMPTION INDEX FOR QUEUE (0-10).....0

```

➡ ENTER 'Y' FOR ENABLE DETECTOR

ENTER '1' FOR PHASES ASSIGNED

ENSURE DELAY IS '0'

```

VEHICLE DETECTOR #51  SETTINGS (+,-,1-64)
SETTING:                                     (Y/N)
ENABLE DETECTOR.....Y
ENABLE LOGGING.....N
ENABLE DIAGNOSTICS.....N
SPEED TRAP.....N
CALL DETECTOR.....Y
EXTENSION DETECTOR.....Y
MODE 2 STOP BAR.....N
SWITCHING DETECTOR.....N
DUPLICATING DETECTOR.....N
ENABLE FULL TIME DELAY.....N
IF FAILED, SET MIN RECALL?.....N
IF FAILED, SET MAX1 RECALL?.....N
IF FAILED, SET MAX2 RECALL?.....N
PHASE#                                     ;12345678910111213141516
PHASES ASSIGNED ;X
SWITCH/DUPLICATE;
LOOP SIZE (0-255 FT).....6
SPEED TRAP DISTANCE (0-255 FT).....0
STOP BAR TIME (0-255 SEC).....0
STRETCH (0-25.5 SEC).....0.0
DELAY (0-255 SEC).....0
MAX CALLS/MIN (0-255).....255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).....0
MAX OCCUPANCY (0-100%).....100
EXTENSION DISABLE TIME (0-255 SEC).....0
QUEUE MAX OCCUPANCY TIME (0-255).....0
QUEUE GAP RESET TIME (0-25.5).....0.0
PREEMPTION INDEX FOR QUEUE (0-10).....0

```

NOTE: DETECTOR IS PROGRAMMED PER THE
INPUT FILE CONNECTION AND PROGRAMMING
CHART SHOWN ON SHEET 1.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0822T
DESIGNED: May 2025
SEALED: 07/07/2025
REVISED: N/A

Temporary Design; (TMP 4-5, 10-11, 16, 19-20, 25-26, 31-32)
Electrical Detail - Sheet 3 of 6

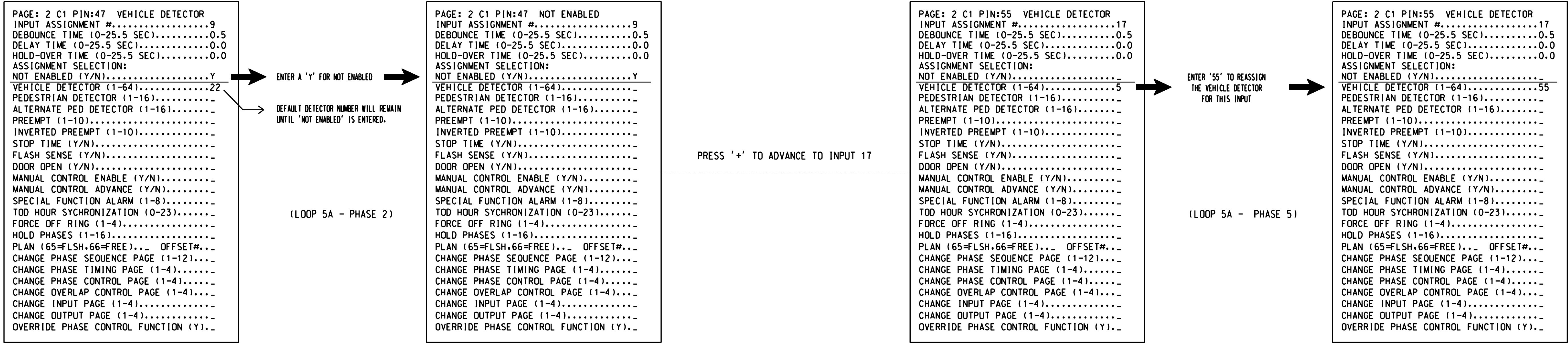
 DAVENPORT HOME OFFICE: 119 BROOKSTOWN AVENUE, SUITE PH1 WINSTON-SALEM, NC 27101 336.744.1636 www.davenportworld.com NCBELS FIRM LICENSE NO. C-2522	ELECTRICAL AND PROGRAMMING DETAILS FOR:  750 N. Greenfield Pkwy, Garner, NC 27529	NC 53 (Western Boulevard) at SR 2714 (Jacksonville Parkway) / Gateway North Division 3 Onslow County Jacksonville <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">PLAN DATE: May 2025</td> <td style="width: 50%;">REVIEWED BY: L. Boyer</td> </tr> <tr> <td>PREPARED BY: J Dollarhite</td> <td>RKA PROJ. NO.:</td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;">REVISONS</th> <th style="width: 15%;">INIT.</th> <th style="width: 15%;">DATE</th> </tr> </thead> <tbody> <tr> <td style="height: 40px;"></td> <td></td> <td></td> </tr> </tbody> </table>	PLAN DATE: May 2025	REVIEWED BY: L. Boyer	PREPARED BY: J Dollarhite	RKA PROJ. NO.:	REVISONS	INIT.	DATE			
PLAN DATE: May 2025	REVIEWED BY: L. Boyer											
PREPARED BY: J Dollarhite	RKA PROJ. NO.:											
REVISONS	INIT.	DATE										
SEAL  Signed by: <i>Lori M Boyer</i> 07/07/2025 CES-CAS-009789-0001 <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">SIGNATURE</th> <th style="width: 40%;">DATE</th> </tr> </thead> <tbody> <tr> <td>SIG. INVENTORY NO. 03-08222</td> <td></td> </tr> </tbody> </table>			SIGNATURE	DATE	SIG. INVENTORY NO. 03-08222							
SIGNATURE	DATE											
SIG. INVENTORY NO. 03-08222												

INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 5A

(program controller as shown below)

- NOTES: 1. THIS PROGRAMMING APPLIES FOR INPUT PAGE 2 ONLY. INPUT PAGE 1 WILL USE STANDARD DEFAULT SETTINGS. THIS PROGRAMMING IS NECESSARY FOR PROPER DETECTOR OPERATION DURING ALTERNATE PHASING OPERATION.
2. THE FIRST TASK THIS PROGRAMMING ACCOMPLISHES IS THE DISABLING OF INPUT #9 (DETECTOR 22) SO THAT A VEHICLE CALL WILL NOT BE PLACED TO PHASE 2 DURING ALTERNATE PHASING OPERATION. THE SECOND TASK THIS PROGRAMMING ACCOMPLISHES IS THAT IT REASSIGNS DETECTOR 55 TO INPUT #17 SO THAT THE DELAY ON LOOP 5A CAN BE REDUCED FROM 15 SECONDS TO 0 SECONDS.

FROM MAIN MENU PRESS '5' (INPUTS). THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 9 IS REACHED.

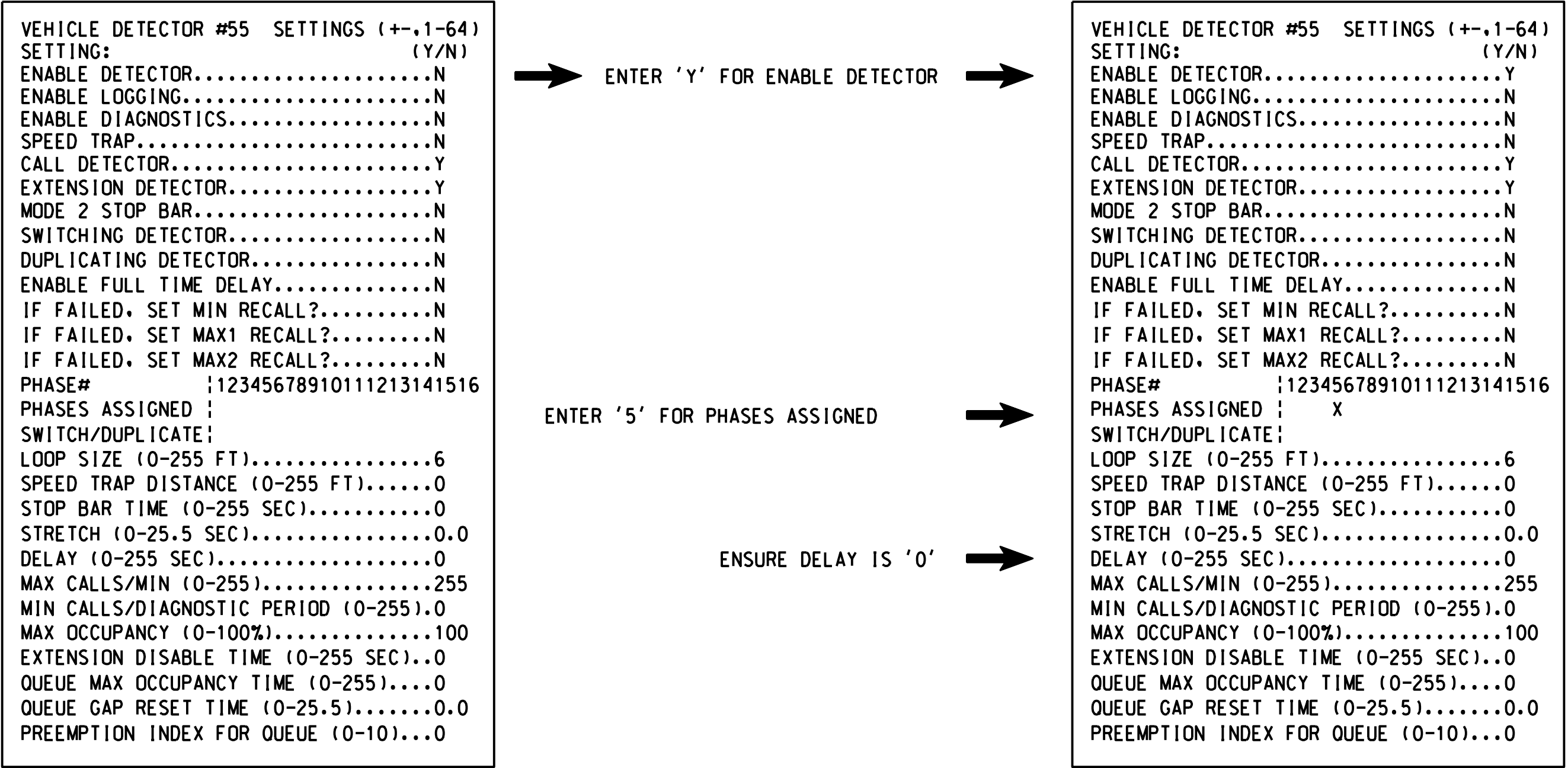


PROGRAMMING COMPLETE

SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 5A (ALT.)

(program controller as shown below)

FROM MAIN MENU PRESS '7' (DETECTORS). THEN PRESS '1' FOR VEHICLE DETECTORS. PRESS THE '-' KEY TO GET TO VEHICLE DETECTOR #55.



DETECTOR PROGRAMMING COMPLETE

NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0822T
DESIGNED: May 2025
SEALED: 07/07/2025
REVISED: N/A

Temporary Design;(TMP 4-5,10-11,16,19-20,25-26,31-32)
Electrical Detail - Sheet 4 of 6



ELECTRICAL AND PROGRAMMING DETAILS FOR:		NC 53 (Western Boulevard) at SR 2714 (Jacksonville Parkway)/ Gateway North		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Division 3 Onslow County Jacksonville		Division 3 Onslow County Jacksonville		SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030912 LORI M. BOYER ENGINEER Signed by: Lori M. Boyer 07/07/2025 SIGNATURE DATE	
PLAN DATE: May 2025	REVIEWED BY: L. Boyer	REVISIONS	INIT.	DATE	SIG. INVENTORY NO. 03-0822T
PREPARED BY: J Dollarhite	RKA PROJ. NO.:				

OVERLAP PROGRAMMING DETAIL
(FOR DEFAULT PHASING)

(program controller as shown below)

FROM MAIN MENU PRESS 'B' (OVERLAPS), THEN
'1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: XX
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'D' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'E' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

OVERLAP PROGRAMMING COMPLETE

NOTICE
GREEN
FLASH

NOTICE
GREEN
FLASH

NOTICE
GREEN
FLASH

NOTICE
GREEN
FLASH

OVERLAP PROGRAMMING DETAIL
(FOR ALTERNATE PHASING)

(program controller as shown below)

FROM MAIN MENU PRESS 'B' (OVERLAPS), THEN
'1' (VEHICLE OVERLAP SETTINGS).

PRESS 'NEXT' TO ADVANCE TO PAGE 2

PAGE 2: VEHICLE OVERLAP 'A' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW - GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 2: VEHICLE OVERLAP 'B' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW - GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 2: VEHICLE OVERLAP 'C' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW - GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 2: VEHICLE OVERLAP 'D' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 2: VEHICLE OVERLAP 'E' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

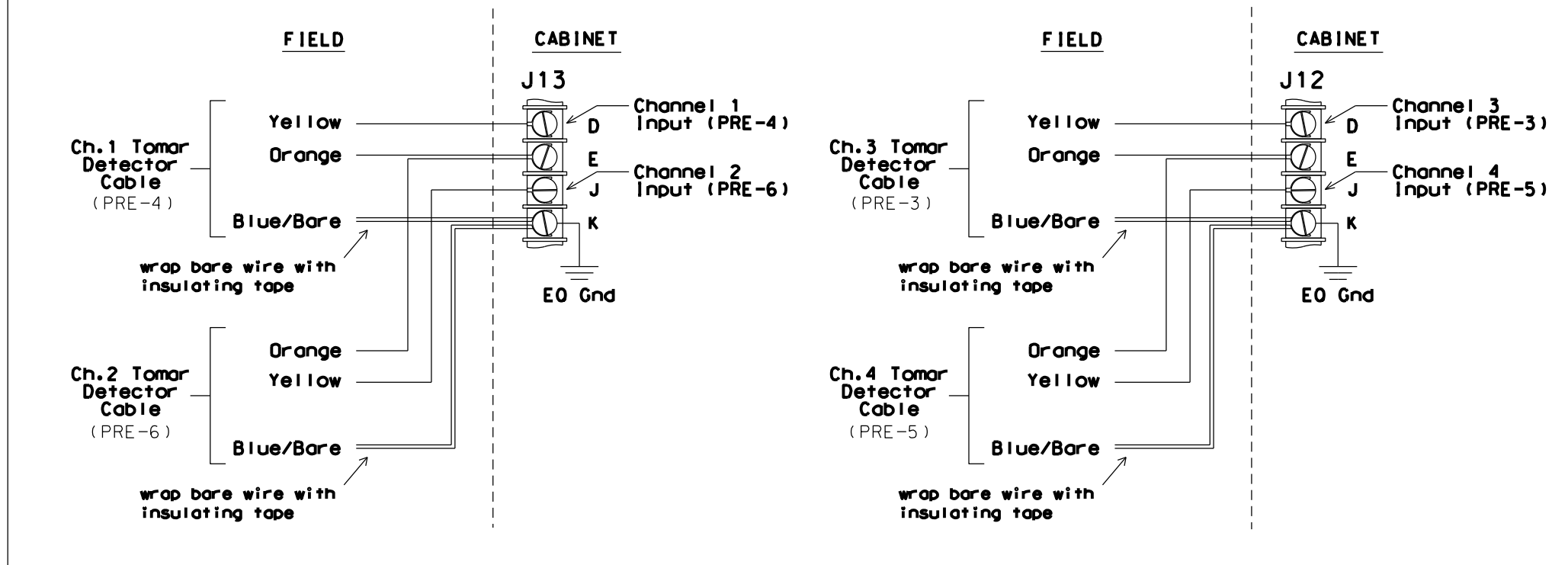
OVERLAP PROGRAMMING COMPLETE

NOTICE
GREEN
FLASH

NOTICE
GREEN
FLASH

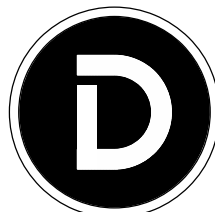
TYPICAL TOMAR FIELD WIRE DETAIL

(input file, rear view)



THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0822T
DESIGNED: May 2025
SEALED: 07/07/2025
REVISED: N/A

Project #: 230907

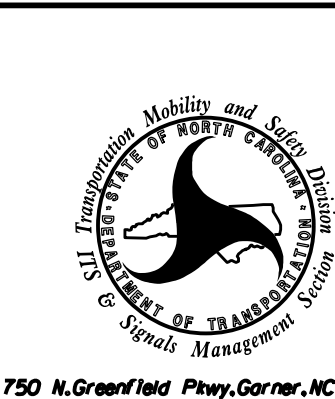


DAVENPORT

HOME OFFICE:
119 BROOKSTOWN AVENUE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportworld.com
NCBELS FIRM LICENSE NO. C-2522

Temporary Design;(TMP 4-5,10-11,16,19-20,25-26,31-32)
Electrical Detail - Sheet 5 of 6

ELECTRICAL AND PROGRAMMING
DETAILS FOR:



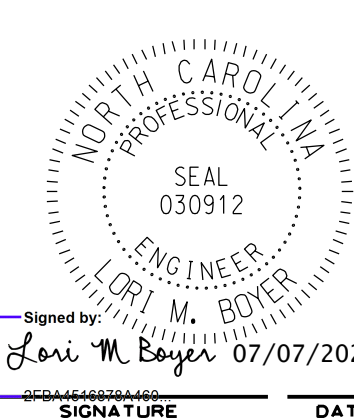
NC 53 (Western Boulevard)
at
SR 2714 (Jacksonville Parkway))/
Gateway North
Division 3 Onslow County Jacksonville

PLAN DATE: May 2025 REVIEWED BY: L. Boyer
PREPARED BY: J Dollarhite RKA PROJ. NO.:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL



Signed by: Lori M. Boyer 07/07/2025
DATE
SIG. INVENTORY NO. 03-0822T

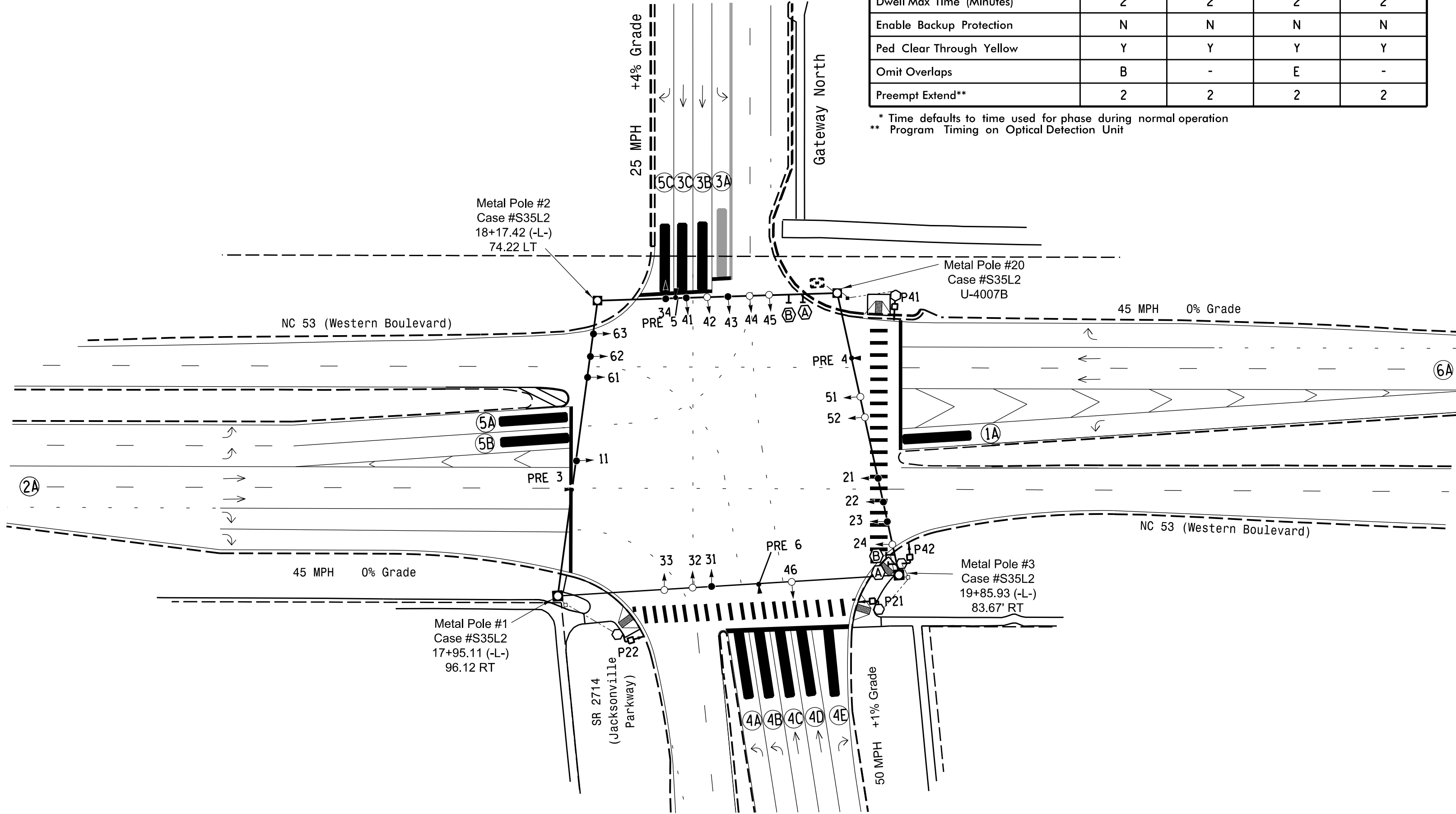
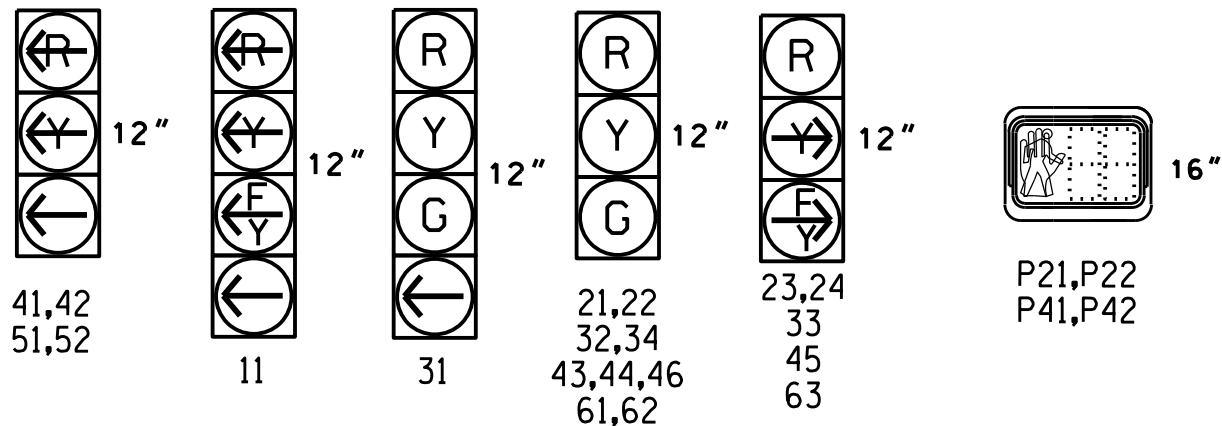
PROJECT REFERENCE NO.	SHEET NO.
U-5789	Sig. 2.0

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART											
INDUCTIVE LOOPS				DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP NEW CARD
1A	*	0	*	Y	1	Y	Y	-	-	15**	-
					6#	Y	Y	-	-	-	-
3A	*	0	*	-	3	Y	Y	-	-	3	-
3B	*	0	*	Y	3	Y	Y	-	-	-	*
3C	*	0	*	Y	3	Y	Y	-	-	-	*
4A	*	0	*	Y	4	Y	Y	-	-	-	-
4B	*	0	*	Y	4	Y	Y	-	-	-	-
4C	*	0	*	Y	4	Y	Y	-	-	-	-
4D	*	0	*	Y	4	Y	Y	-	-	-	*
4E	*	0	*	Y	4	Y	Y	-	-	15	*
5A	*	0	*	Y	5	Y	Y	-	-	-	-
5B	*	0	*	Y	5	Y	Y	-	-	-	-
5C	*	0	*	Y	5	Y	Y	-	-	15	*

* Multizone Microwave Detection
Disable Phase call for loop during Alternate Phasing Operation.
** Disable Delay During Alternate Phasing Operation.

SIGNAL FACE I.D.

All Heads L.E.D.



OASIS 2070 EV PREEMPT				
FUNCTION	PRE 3	PRE 4	PRE 5	PRE 6
Interval 1 – Dwell Green	255	255	255	255
Interval 1 – Dwell Yellow	0.0*	0.0*	0.0*	0.0*
Interval 1 – Dwell Red	0.0*	0.0*	0.0*	0.0*
Interval 5 – Exit Green	1	1	1	1
Interval 5 – Yellow	0.0	0.0	0.0	0.0
Interval 5 – Red	0.0	0.0	0.0	0.0
Exit Phase(s)	2+6	2+6	3	4
Priority	MED	MED	MED	MED
Delay Time	0.0	0.0	0.0	0.0
Min Green Before Pre	1	1	1	1
Ped Clear Before Pre	0 *	0 *	0 *	0 *
Yellow Clear Before Pre	0.0*	0.0*	0.0*	0.0*
Red Clear Before Pre	0.0*	0.0*	0.0*	0.0*
Dwell Min Time	12	12	7	7
Dwell Max Time (Minutes)	2	2	2	2
Enable Backup Protection	N	N	N	N
Ped Clear Through Yellow	Y	Y	Y	Y
Omit Overlaps	B	-	E	-
Preempt Extend**	2	2	2	2

* Time defaults to time used for phase during normal operation
** Program Timing on Optical Detection Unit

6 Phase
Fully Actuated
w/ EV Preemption
Jacksonville City Signal System

NOTES

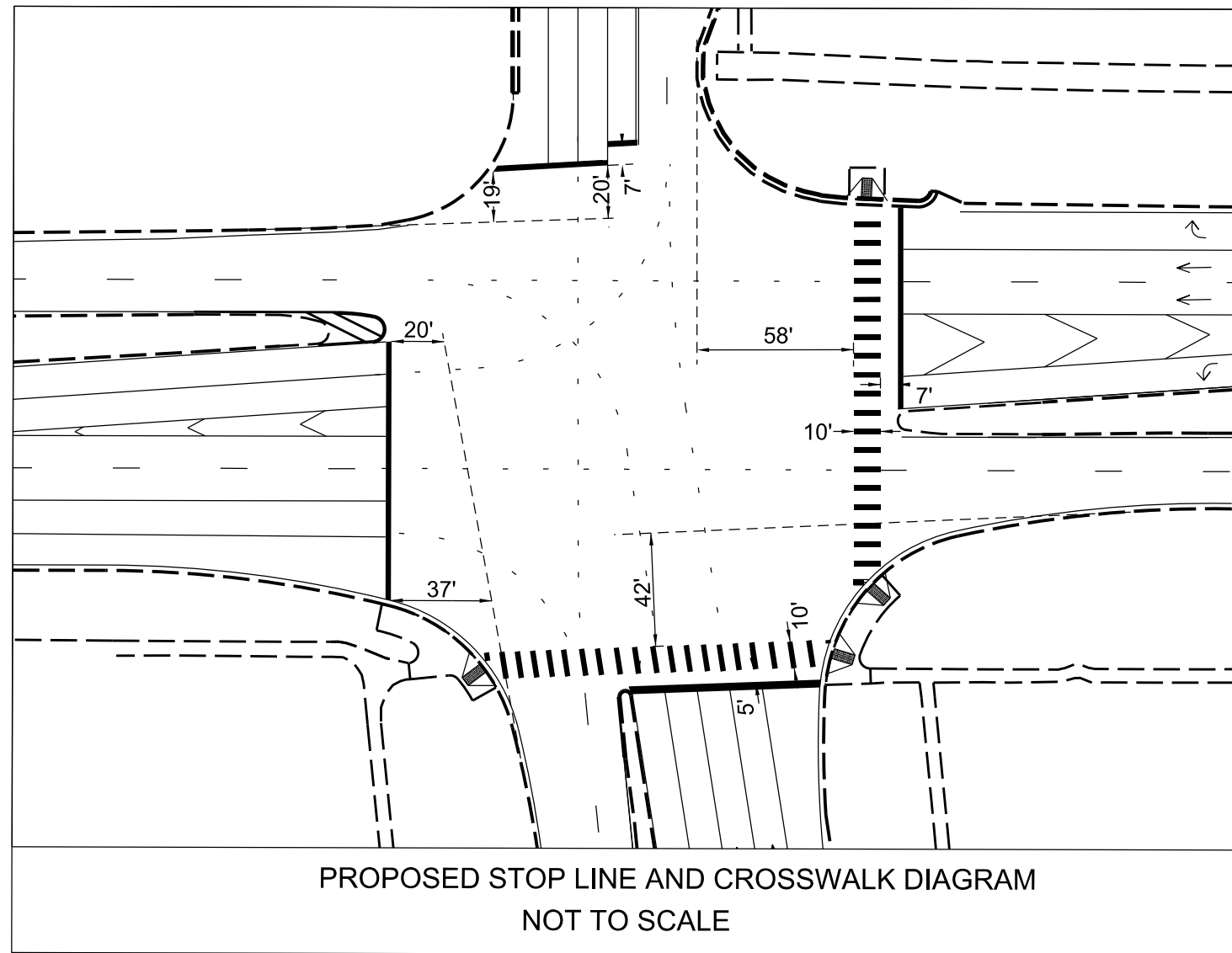
- Refer to "Roadway Standard Drawings NCDOT" dated January 2024. "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- The order of phase 3 and phase 4 may be reversed.
- Reposition existing signal heads numbered 11, 31, 41, and 43.
- Reposition head 33 and renumber as 34.
- Set all detector units to presence mode.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Remove existing signs R3-5L, R3-6L, R3-6R, and R10-16.
- To provide a leading pedestrian interval on phases 2 and 4, program FYA heads 11, 23, 24, and 45 to delay 7.0 seconds after the start of the phase 2 or 4 WALK interval. See Electrical Details for programming.
- This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
- The Division (City) Traffic Engineer will determine the hours of use for each phasing plan.
- This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

LEGEND

PROPOSED	EXISTING

OASIS 2070 TIMING CHART						
FEATURE	PHASE					
	1	2	3	4	5	6
Min Green 1 *	7	12	7	7	7	12
Extension 1 *	2.0	6.0	2.0	3.0	2.0	6.0
Max Green 1 *	20	90	30	30	20	90
Yellow Clearance	3.0	4.5	3.0	4.7	3.0	4.5
Red Clearance	4.1	2.7	4.0	2.7	3.8	2.7
Walk 1 *	-	14	-	14	-	-
Don't Walk 1	-	33	-	37	-	-
Advance Walk	-	-	-	-	-	-
Seconds Per Actuation *	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-
Recall Mode	-	-	-	-	-	-
Vehicle Call Memory	-	-	-	-	-	-
Dual Entry	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.



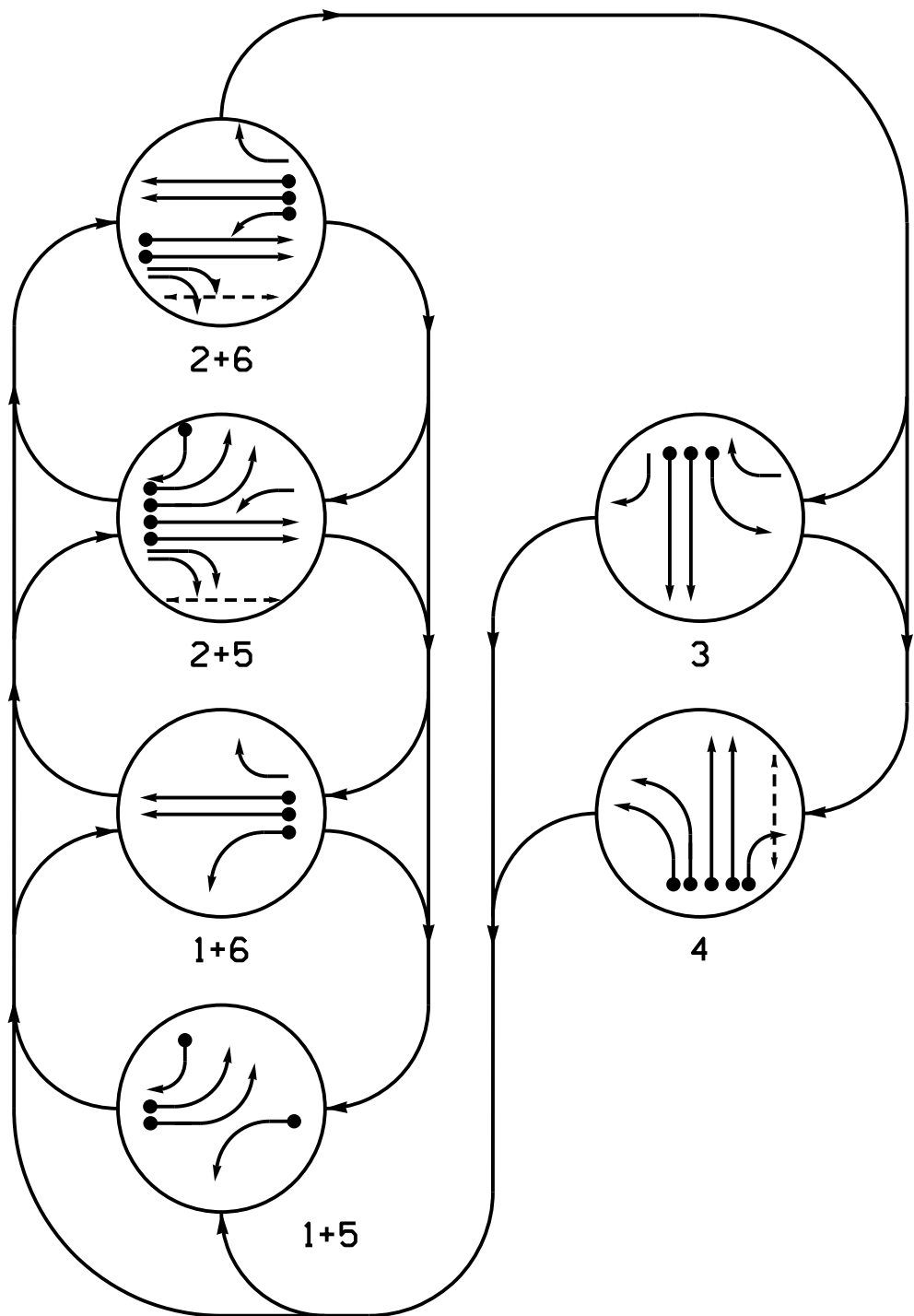
Project #: 230907



Signal Upgrade - Sheet 1 of 2

	NC 53(Western Boulevard) at SR 2714(Jacksonville Parkway)/ Gateway North		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
	Division 03 PLAN DATE: May 2025 PREPARED BY: J. Dollarwhite	Onslow County REVIEWED BY: L. Boyer REVIEWED BY:	SEAL 030912 ENGINEER Lori M. Boyer 07/07/2025	SIG. INVENTORY NO. 03-0822

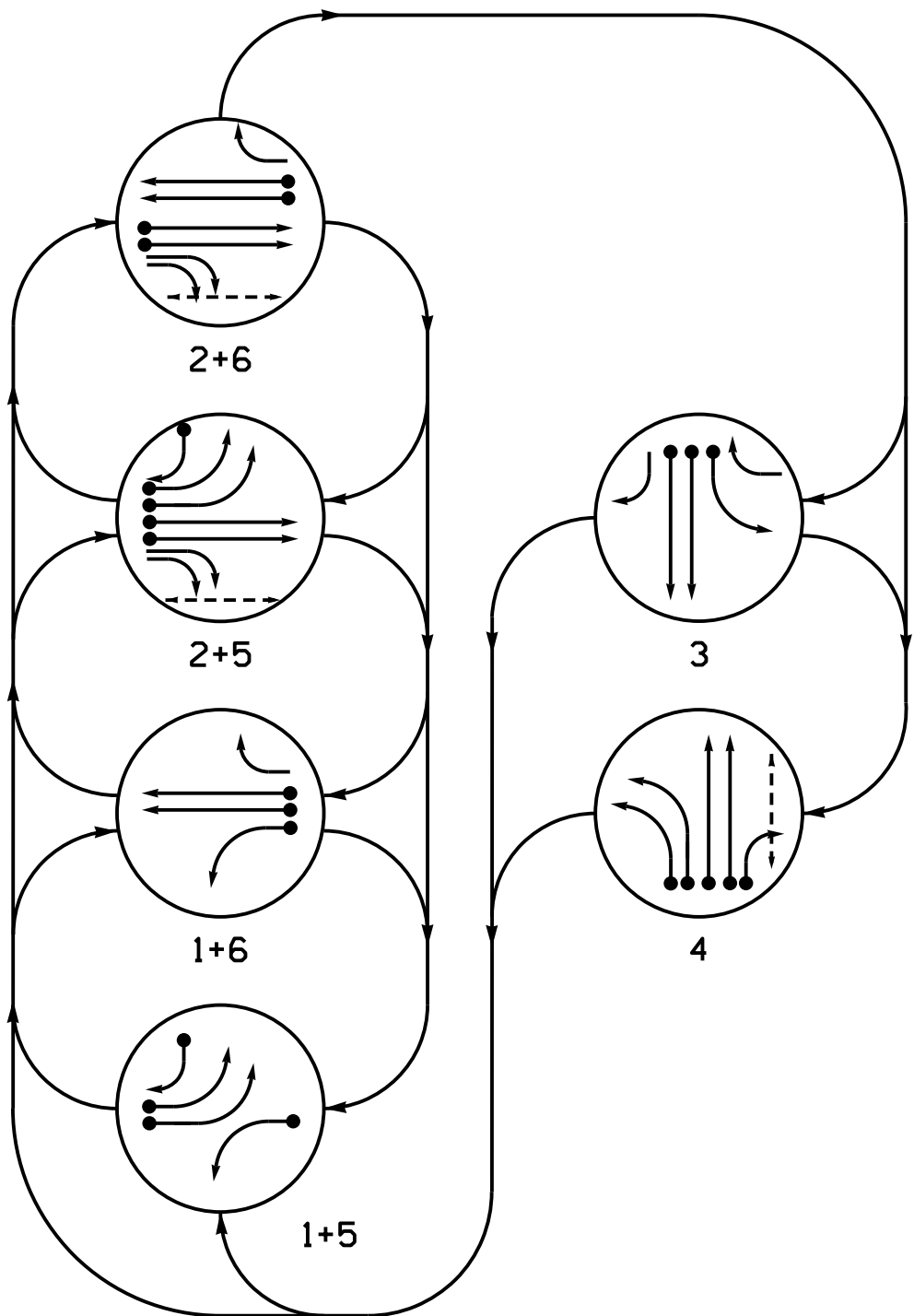
DEFAULT PHASING DIAGRAM



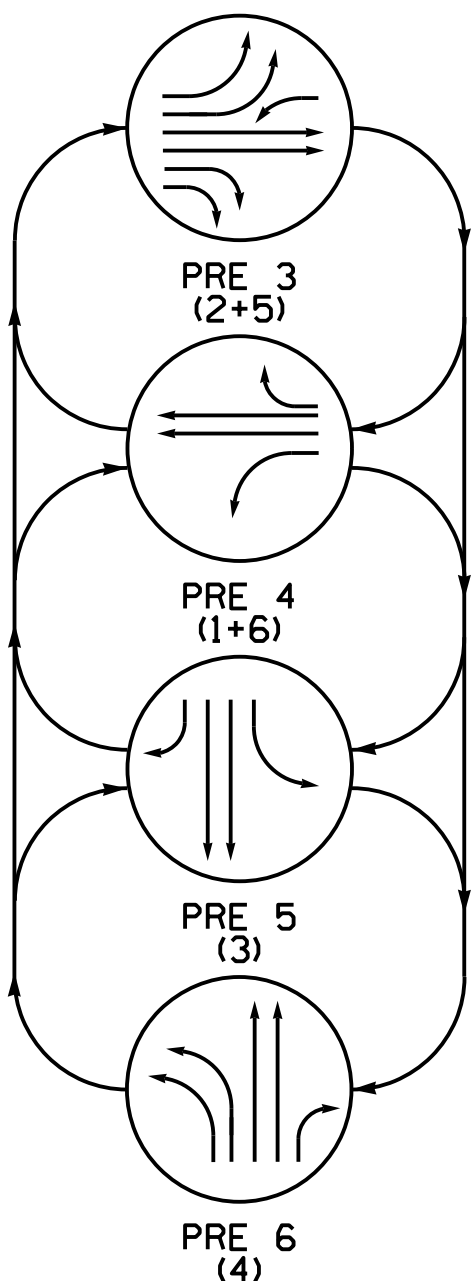
PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

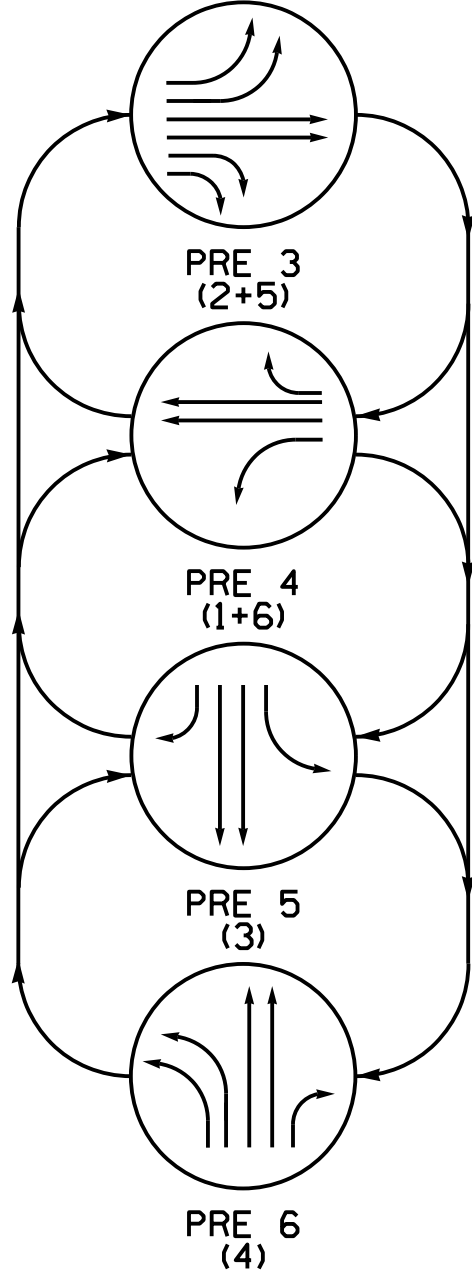
ALTERNATE PHASING DIAGRAM



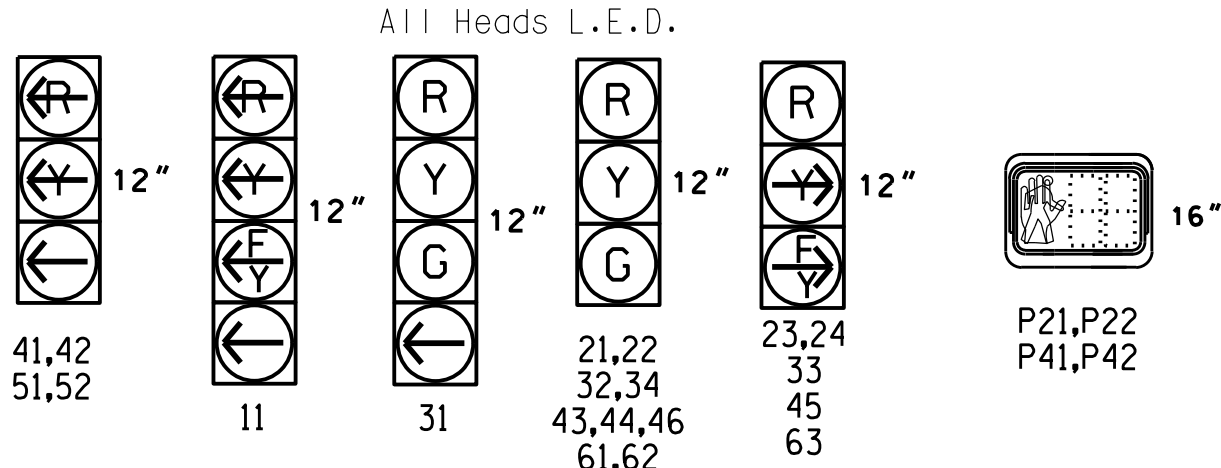
DEFAULT
EV PREEMPT PHASES
(Medium Priority)



ALTERNATE
EV PREEMPT PHASES
(Medium Priority)



SIGNAL FACE I.D.



DEFAULT PHASING TABLE OF OPERATION												
SIGNAL FACE	PHASE											
	1 + 5	1 + 6	2 + 5	2 + 6	3	4	PRE 3	PRE 4	PRE 5	PRE 6	FLASH	
11	---	---	F	F	R	R	F	---	R	R	R	
21,22	R	R	G	G	R	R	G	R	R	R	R	
23,24	R	R	F	F	R	R	F	R	R	R	R	
31	R	R	R	R	G	R	R	R	G	R	R	
32,34	R	R	R	R	G	R	R	R	G	R	R	
33	F	R	F	R	F	R	R	R	F	R	R	
41,42	R	R	R	R	R	---	R	R	R	---	R	
43,44,46	R	R	R	R	R	G	R	R	R	G	R	
45	R	R	R	R	R	F	R	R	R	F	R	
51,52	---	R	---	R	R	R	---	R	R	R	R	
61,62	R	G	R	G	R	R	R	G	R	R	R	
63	R	F	R	F	F	R	R	F	R	R	R	
P21,P22	DW	DW	W	W	DW	DW	DW	DW	DW	DW	DRK	
P41,P42	DW	DW	DW	DW	DW	W	DW	DW	DW	DW	DRK	

ALTERNATE PHASING TABLE OF OPERATION												
SIGNAL FACE	PHASE											
	1 + 5	1 + 6	2 + 5	2 + 6	3	4	PRE 3	PRE 4	PRE 5	PRE 6	FLASH	
11	---	---	R	R	R	R	R	---	R	R	R	
21,22	R	R	G	G	R	R	G	R	R	R	R	
23,24	R	R	F	F	R	R	F	R	R	R	R	
31	R	R	R	R	G	R	R	R	G	R	R	
32,34	R	R	R	R	G	R	R	R	G	R	R	
33	F	R	F	R	F	R	R	R	F	R	R	
41,42	R	R	R	R	R	---	R	R	R	---	R	
43,44,46	R	R	R	R	R	G	R	R	R	G	R	
45	R	R	R	R	R	F	R	R	R	F	R	
51,52	---	R	---	R	R	R	---	R	R	R	R	
61,62	R	G	R	G	R	R	R	G	R	R	R	
63	R	F	R	F	F	R	R	F	R	R	R	
P21,P22	DW	DW	W	W	DW	DW	DW	DW	DW	DW	DRK	
P41,P42	DW	DW	DW	DW	DW	W	DW	DW	DW	DW	DRK	

6 Phase
Fully Actuated
w/ EV Preemption
Jacksonville City Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024, "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- The order of phase 3 and phase 4 may be reversed.
- Reposition existing signal heads numbered 11, 31, 41, and 43.
- Reposition head 33 and renumber as 34.
- Set all detector units to presence mode.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- Remove existing signs R3-5L, R3-6L, R3-6R, and R10-16.
- To provide a leading pedestrian interval on phases 2 and 4, program FYA heads 11, 23, 24, and 45 to delay 7.0 seconds after the start of the phase 2 or 4 WALK interval. See Electrical Details for programming.
- This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
- The Division (City) Traffic Engineer will determine the hours of use for each phasing plan.
- This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

Project #: 230907



Signal Upgrade - Sheet 2 of 2

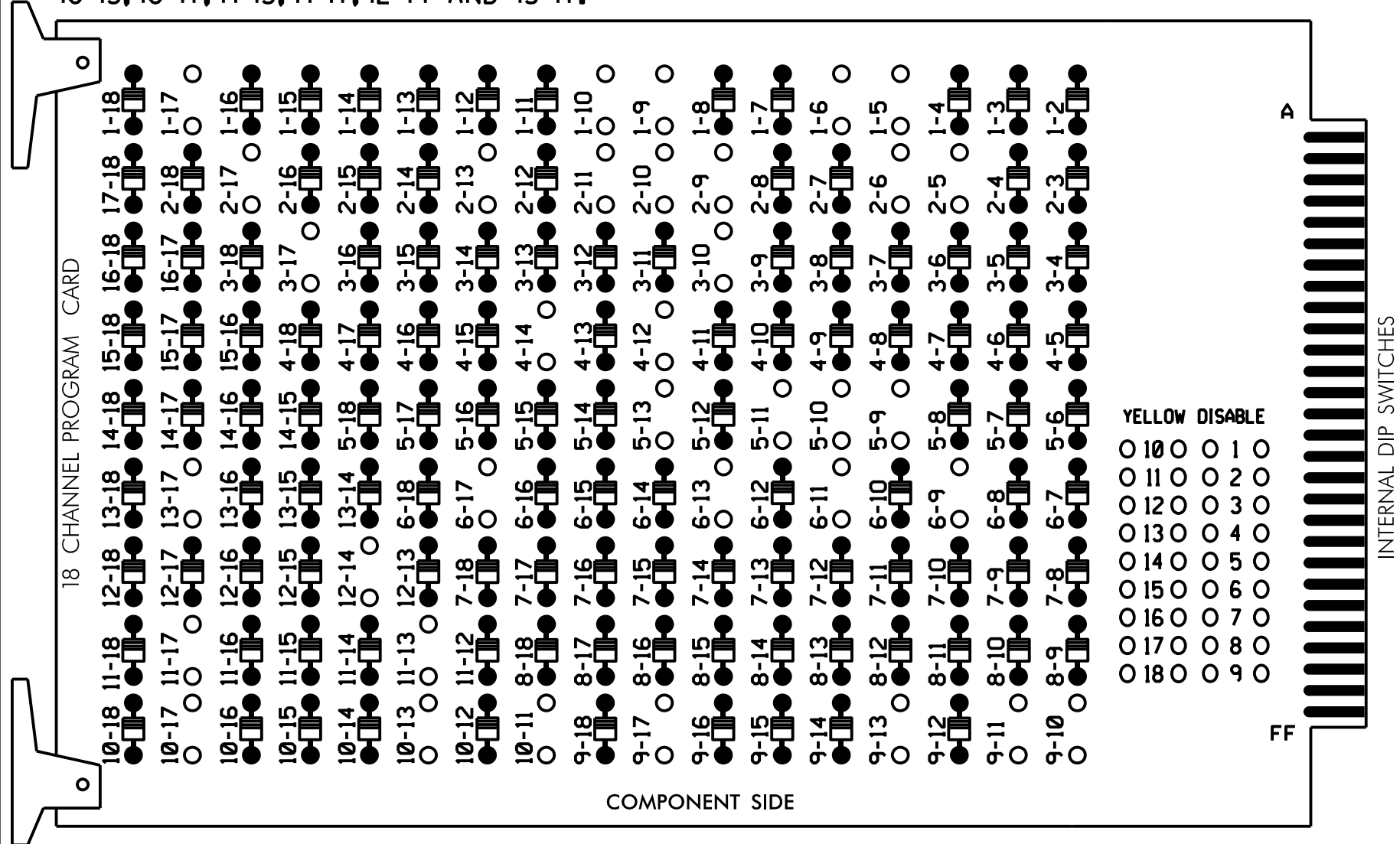
	NC 53(Western Boulevard) at SR 2714(Jacksonville Parkway)/ Gateway North		
	Division 03	Onslow County Jacksonville	
PLAN DATE: May 2025	REVIEWED BY: L. Boyer		
PREPARED BY: J. Dollarhite	REVIEWED BY:		
REVISIONS	INIT.	DATE	
SIGNATURE		DATE	
SIG. INVENTORY NO.		03-0822	

18 CHANNEL IP CONFLICT MONITOR

PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS I-5, I-6, I-9, I-10, I-17, 2-5, 2-6, 2-9, 2-10, 2-11, 2-13, 2-17, 3-10, 3-17, 4-12, 4-14, 5-9, 5-10, 5-11, 5-13, 6-9, 6-11, 6-13, 6-17, 9-10, 9-11, 9-13, 9-17, 10-11, 10-13, 10-17, 11-13, 11-17, 12-14 AND 13-17.



REMOVE JUMPERS AS SHOWN

NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
- Ensure that Red Enable is active at all times during normal operation.
- Integrate monitor with Ethernet network in cabinet.

■ = DENOTES POSITION OF SWITCH

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Enable Simultaneous Gap-Out for all Phases.
- Disable all phases for Startup in Green and Yellow Flash.
- Program phases 2 and 6 as First Phases.
- Program overlaps 1, 2 and 5 as Wag Overlaps.
- The cabinet and controller are part of the Jacksonville City Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/ AUX
SOFTWAREECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS..18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S7,S8,AUX S1
AUX S2,AUX S3,AUX S4,AUX S5
PHASES USED.....1,2,2 PED,3,4,4 PED,5,6
OVERLAP "A".....1+2
OVERLAP "B".....3+5
OVERLAP "C".....2
OVERLAP "D".....4
OVERLAP "E".....3+6

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3	4	14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	OLE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	21,22	P21,P22	31	32,34	41,42	43,44,45	P41,P42	51,52	61,62	NU	NU	NU	11	33	63	23,24	45
RED		128		116	116		101			134					A124	A111	A114	A101
YELLOW	*	129		117	117		102			135								
GREEN		130		118	118		103			136								
RED ARROW						101			131					A121				
YELLOW ARROW						102			132					A122	A125	A112	A115	A102
FLASHING YELLOW ARROW														A123	A126	A113	A116	A103
GREEN ARROW	127			118		103			133									
Hand icon			113					104										
Walking person icon			115					106										

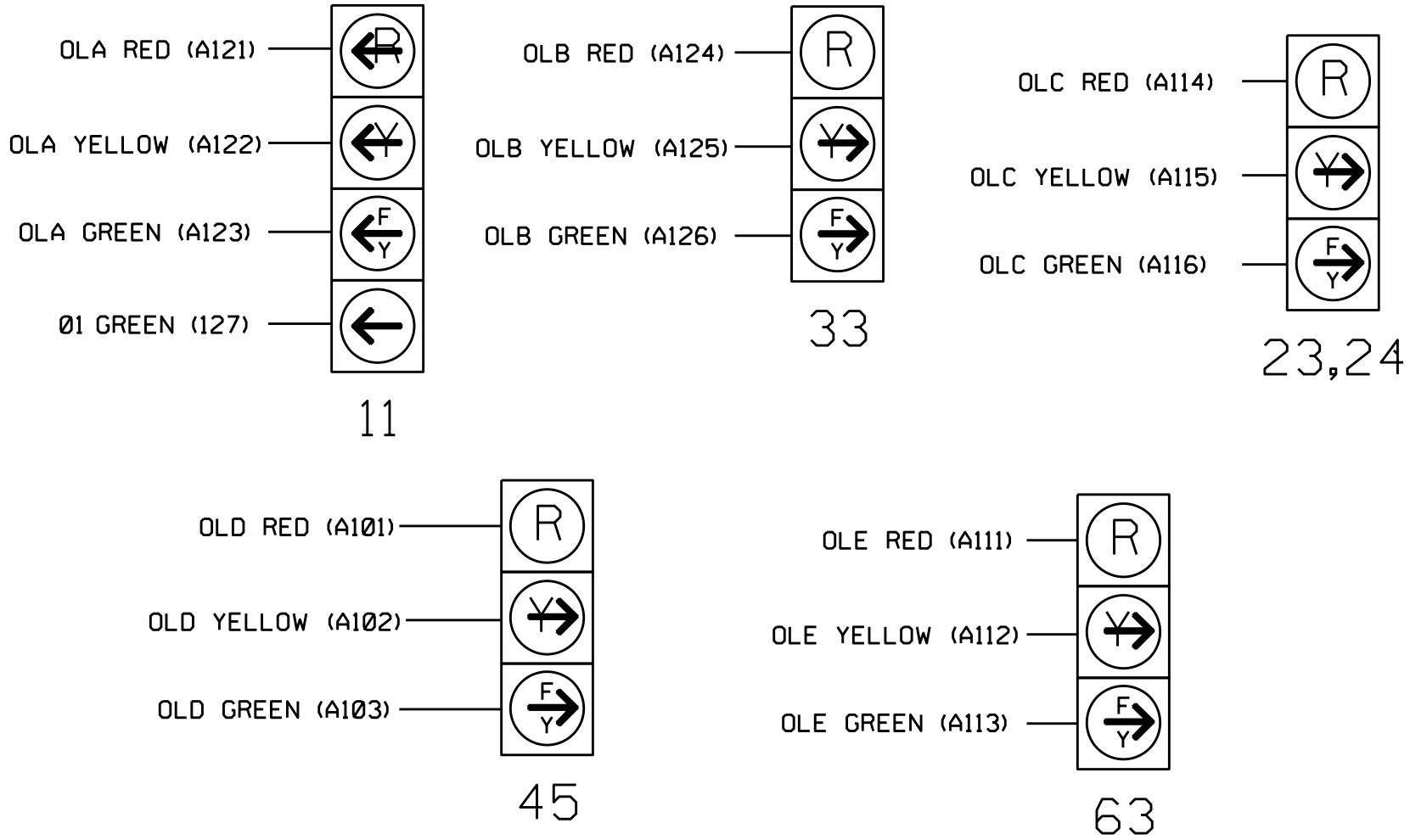
NU = Not Used

* Denotes install load resistor. See load resistor installation detail this sheet.

★ See pictorial of head wiring in detail this sheet.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

- The sequence display for signal head 11 requires special logic programming. See sheet 3 for programming instructions.

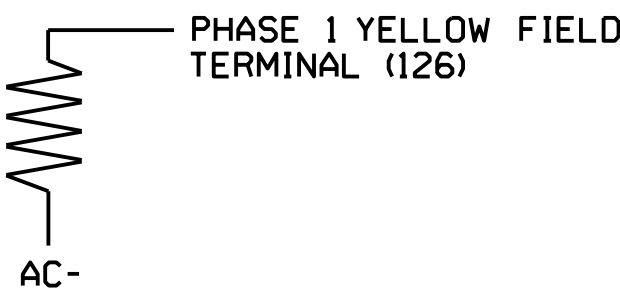
Project #: 230907

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0822
DESIGNED: May 2025
SEALED: 07/07/2025
REVISED: N/A

DAVENPORT
HOME OFFICE:
119 BROOKSTOWN AVENUE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportworld.com
NCBELS FIRM LICENSE NO. C-2622

LOAD RESISTOR INSTALLATION DETAIL

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



Note: Remove load resistors from terminals 132 and A124 if present.

SPECIAL DETECTOR NOTE

Install a multizone microve detection zone for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

For Detection Zone 1A, the equipment placement and slots reserved for wired inputs are typical for NCDOT installation. Inputs associated with these slots are compatible with the time of day instructions located on sheet 4 of this electrical detail.

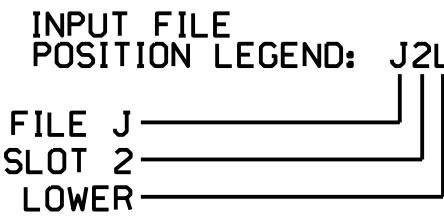
INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A ¹	TB2-1,2	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10 ★	26	6	Y	Y			
	-	I1U	56	18 ★	51	1	Y	Y			
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	29	PED 2	2 PED					
P41, P42	TB8-5,6	I12L	69	31	PED 4	4 PED					

NOTE: INSTALL DC ISOLATOR IN INPUT FILE SLOT 112.

¹Add jumper from I1-W to J4-W, on rear of input file.

★ See Input Page Assignment programming detail on sheet 4.



OVERLAP PROGRAMMING DETAIL
FOR DEFAULT PHASING

(program controller as shown below)
FROM MAIN MENU PRESS '8' (OVERLAPS), THEN
'1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)..0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)..0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)..0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'D' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)..0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

NOTICE
GREEN
FLASH

PAGE 1: VEHICLE OVERLAP 'E' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)..0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

NOTICE
GREEN
FLASH

OVERLAP PROGRAMMING COMPLETE

OVERLAP PROGRAMMING DETAIL
FOR ALTERNATE PHASING

(program controller as shown below)
FROM MAIN MENU PRESS '8' (OVERLAPS), THEN
'1' (VEHICLE OVERLAP SETTINGS).
PRESS 'NEXT' TO ADVANCE TO PAGE 2.

PAGE 2: VEHICLE OVERLAP 'A' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW _ GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)..0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

NOTICE
PAGE 2

PRESS '+'

PAGE 2: VEHICLE OVERLAP 'B' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)..0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

NOTICE
PAGE 2

NOTICE
GREEN
FLASH

PRESS '+'

PAGE 2: VEHICLE OVERLAP 'C' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)..0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

NOTICE
PAGE 2

NOTICE
GREEN
FLASH

PRESS '+'

PAGE 2: VEHICLE OVERLAP 'D' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)..0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

NOTICE
PAGE 2

NOTICE
GREEN
FLASH

PRESS '+'

NOTICE
PAGE 2

PAGE 2: VEHICLE OVERLAP 'E' SETTINGS
PHASE: 12345678910111213141516
VEH OVL PARENTS: X X
VEH OVL NOT VEH:
VEH OVL NOT PED:
VEH OVL GRN EXT:
STARTUP COLOR: _ RED _ YELLOW _ GREEN
FLASH COLORS: _ RED _ YELLOW X GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)..0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

NOTICE
GREEN
FLASH

OVERLAP PROGRAMMING COMPLETE

Project #: 230907



Electrical Details - Sheet 2 of 6



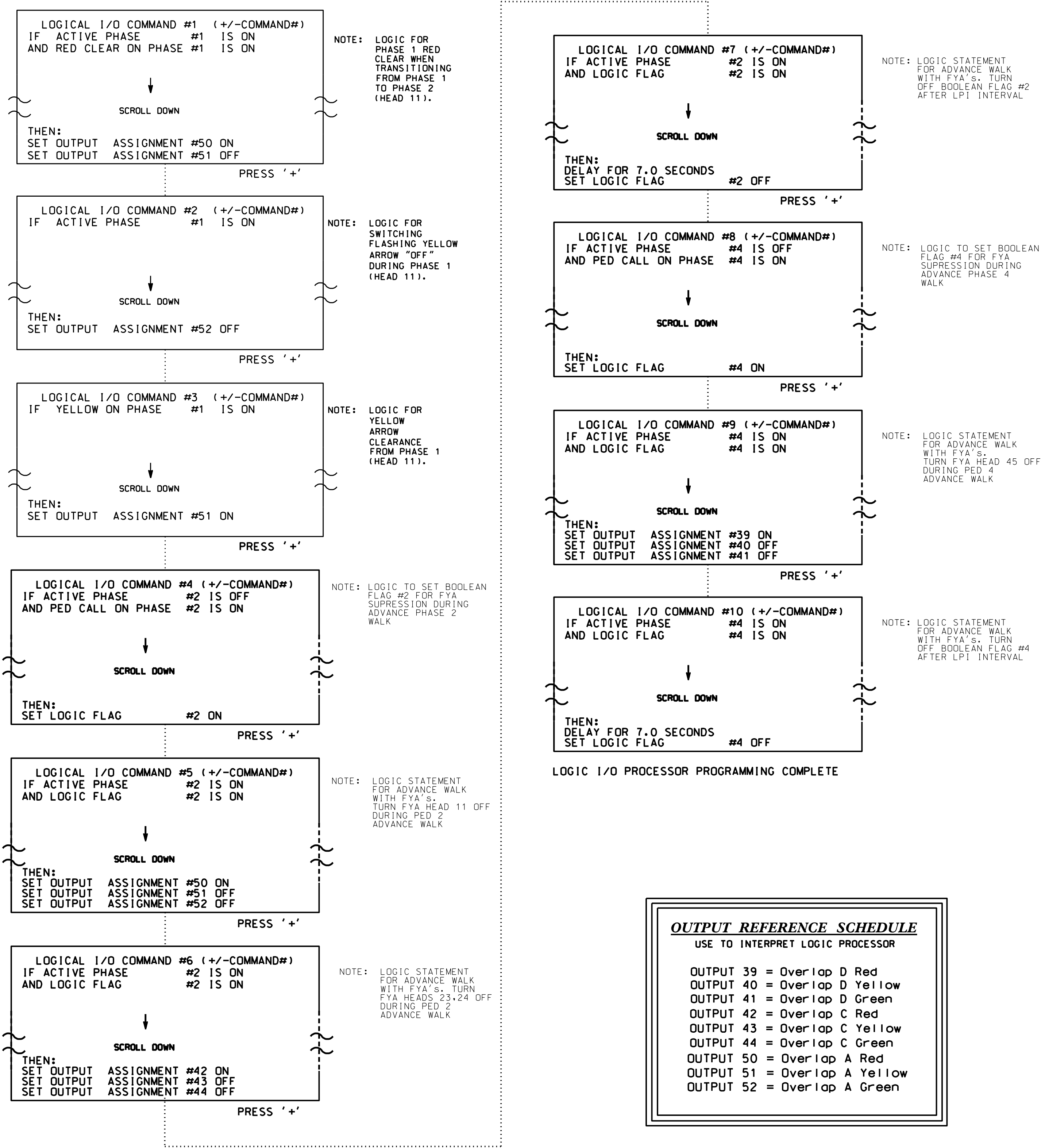
THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0822
DESIGNED: May 2025
SEALED: 07/07/2025
REVISED: N/A

NC 53 (Western Boulevard) at SR 2714 (Jacksonville Parkway))/ Gateway North	
Division 03	Onslow County Jacksonville
PLAN DATE: May 2025	REVIEWED BY: L. Boyer
PREPARED BY: J. Dollarhite	REVIEWED BY:
REVISIONS	INIT. DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
SEAL	
NORTH CAROLINA PROFESSIONAL ENGINEER 030912 LORI M. BOYER Signed by: Lori M. Boyer 07/07/2025	
SIGNATURE	DATE
SIG. INVENTORY NO. 03-0822	

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL
TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE
(program controller as shown below)

1. FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, 3, 4, 5, 6, 7, 8, 9, AND 10.
2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).



OUTPUT REFERENCE SCHEDULE
USE TO INTERPRET LOGIC PROCESSOR

OUTPUT 39 = Overlap D Red
OUTPUT 40 = Overlap D Yellow
OUTPUT 41 = Overlap D Green
OUTPUT 42 = Overlap C Red
OUTPUT 43 = Overlap C Yellow
OUTPUT 44 = Overlap C Green
OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING COORDINATION - SELECT ALL PAGE CHANGES (AS SHOWN BELOW) WITHIN COORDINATION PLAN PROGRAMMING.

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM PAGE CHANGES (SHOWN BELOW) IN SEPARATE TIME OF DAY EVENTS. IF PAGE 1 IS USED, NO EVENT PROGRAMMING IS NECESSARY FOR THAT PARTICULAR PAGE.

PHASING	INPUTS PAGE	OVERLAPS PAGE
ACTIVE PAGES REQUIRED TO RUN DEFAULT PHASING	1	1
ACTIVE PAGES REQUIRED TO RUN ALTERNATE PHASING	2	2

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY PAGE CHANGE EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN PAGE CHANGE EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

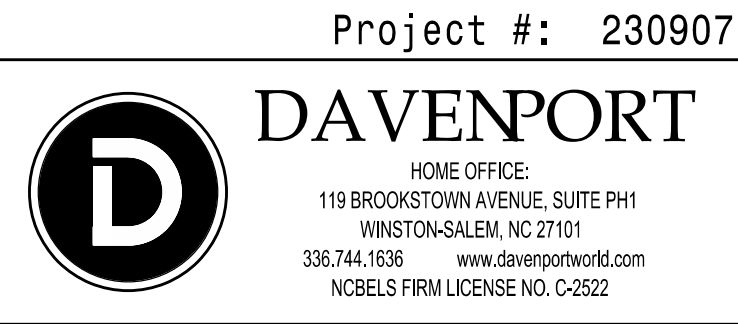
ALTERNATE PHASING PAGE CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN THESE OVERLAP/INPUT PAGE CHANGES ACTIVATE TO CALL THE "ALTERNATE PHASING":

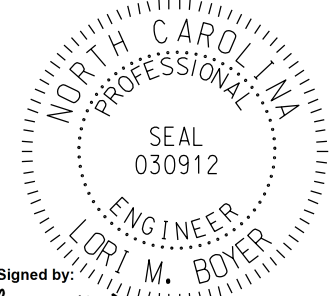
OVERLAPS PAGE 2: Modifies overlap parent phases for heads 11 to run protected turns only.

INPUTS PAGE 2: Disables phase 6 call on loop 1A and reduces delay time for phase 1 call on loop 1A to 0 seconds.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0822
DESIGNED: May 2025
SEALED: 07/07/2025
REVISED: N/A



Electrical Details - Sheet 3 of 6

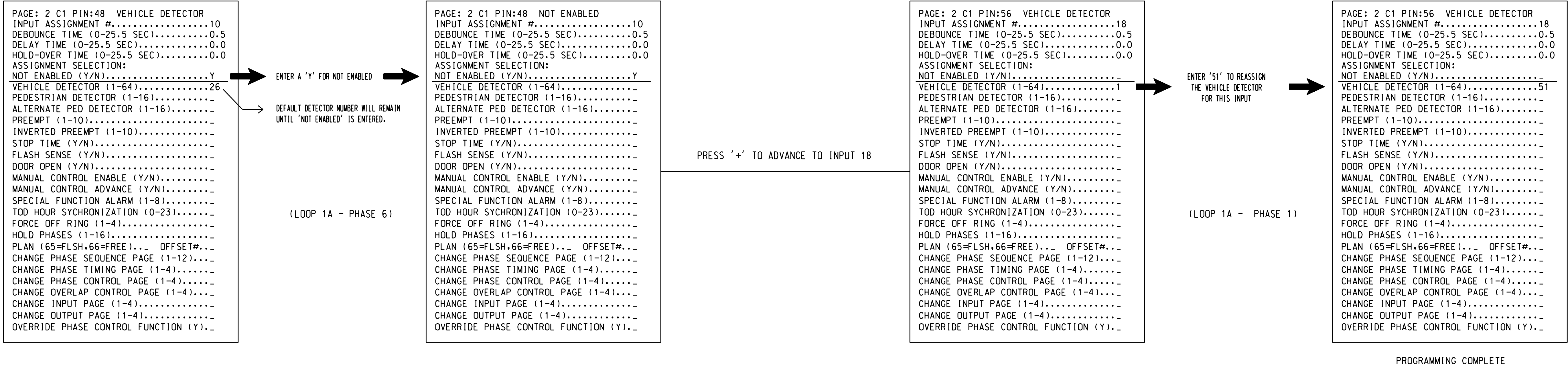
 750 N. Greenfield Pkwy, Garner, NC 27529	ELECTRICAL AND PROGRAMMING DETAILS FOR:		NC 53 (Western Boulevard) at SR 2714 (Jacksonville Parkway)/ Gateway North		 SEAL 030912 LORI M. BOYER ENGINEER NORTH CAROLINA
	Division 03 Onslow County Jacksonville		Division 03 Onslow County Jacksonville		
PLAN DATE: May 2025		REVIEWED BY: L. Boyer		Signed by: Lori M. Boyer 07/07/2025	
PREPARED BY: J. Dollarhite		REVIEWED BY:		DATE	
REVISIONS		INIT.		DATE	
SIGNATURE		DATE		DATE	
SIG. INVENTORY NO. 03-0822					

INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 1A

(program controller as shown below)

- NOTES: 1. THIS PROGRAMMING APPLIES FOR INPUT PAGE 2 ONLY. INPUT PAGE 1 WILL USE STANDARD DEFAULT SETTINGS. THIS PROGRAMMING IS NECESSARY FOR PROPER DETECTOR OPERATION DURING ALTERNATE PHASING OPERATION.
2. THE FIRST TASK THIS PROGRAMMING ACCOMPLISHES IS THE DISABLING OF INPUT #10 (DETECTOR 26) SO THAT A VEHICLE CALL WILL NOT BE PLACED TO PHASE 6 DURING ALTERNATE PHASING OPERATION. THE SECOND TASK THIS PROGRAMMING ACCOMPLISHES IS THAT IT REASSIGNS DETECTOR 51 TO INPUT #18 SO THAT THE DELAY ON LOOP 1A CAN BE REDUCED FROM 15 SECONDS TO 0 SECONDS.

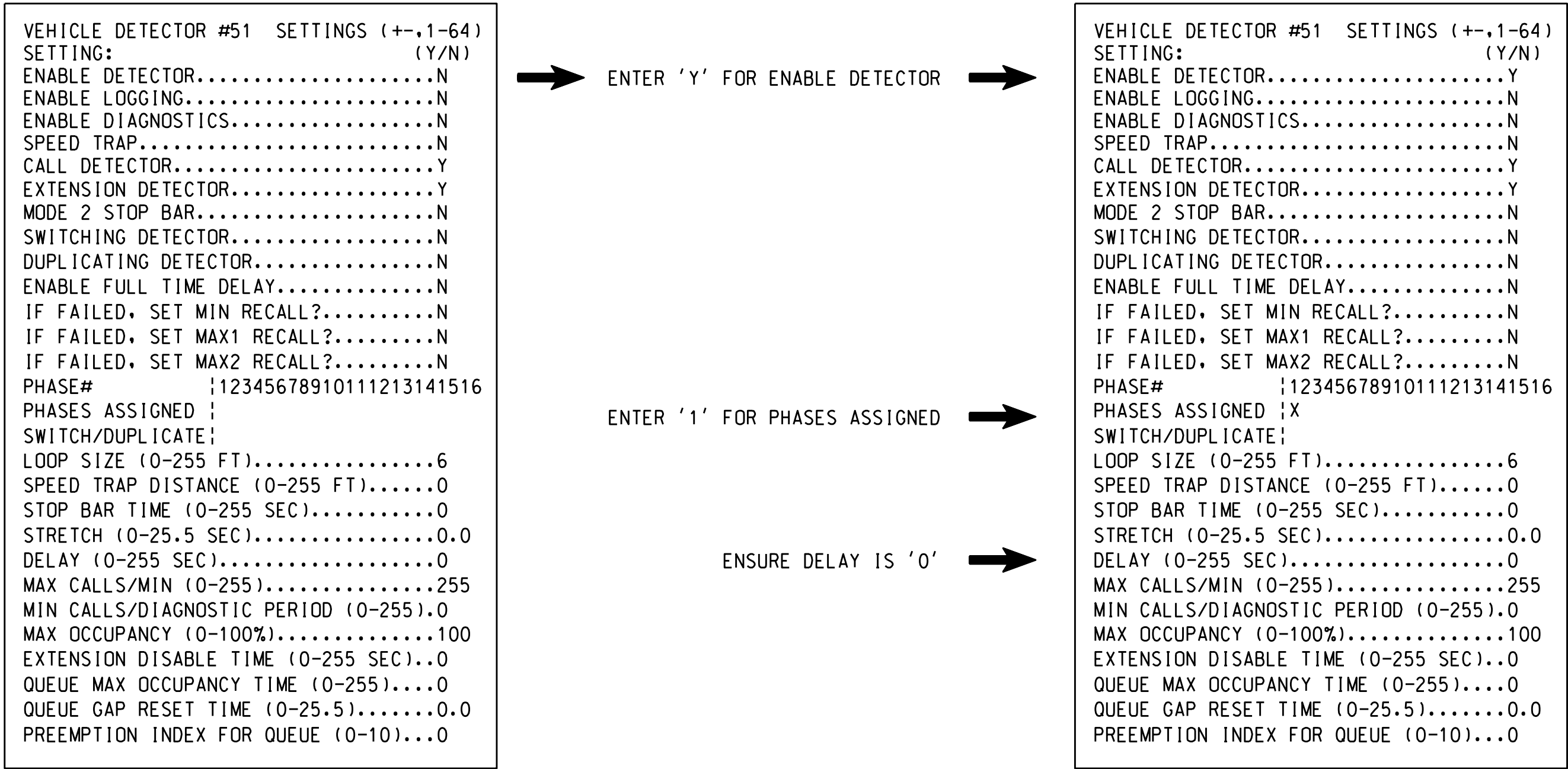
FROM MAIN MENU PRESS '5' (INPUTS), THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 10 IS REACHED.



SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 1A (ALT.)

(program controller as shown below)

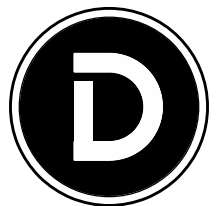
FROM MAIN MENU PRESS '7' (DETECTORS), THEN PRESS '1' FOR VEHICLE DETECTORS. PRESS THE '-' KEY TO GET TO VEHICLE DETECTOR #51.



NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0822
DESIGNED: May 2025
SEALED: 07/07/2025
REVISED: N/A

Project #: 230907



DAVENPORT
HOME OFFICE:
119 BROOKSTOWN AVENUE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportworld.com
NCBELS FIRM LICENSE NO. C-2822

Electrical Details - Sheet 4 of 6

ELECTRICAL AND PROGRAMMING DETAILS FOR:  750 N. Greenfield Pkwy, Garner, NC 27529	NC 53 (Western Boulevard) at SR 2714 (Jacksonville Parkway))/ Gateway North		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
	Division 03 Onslow County Jacksonville		SEAL		
	PLAN DATE: May 2025	REVIEWED BY: L. Boyer	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030912		
	PREPARED BY: J. Dollarhite	REVIEWED BY:	Signed by: <i>Lori M. Boyer</i> 07/07/2025		
	REVISIONS		INIT.	DATE	
				SIGNATURE	DATE
				SIG. INVENTORY NO.	03-0822

OUTPUT ASSIGNMENTS PROGRAMMING DETAILS
FOR LOAD SWITCH AUX S3 (SIGNAL HEAD 63)

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN
'1' (OUTPUT ASSIGNMENTS).
WITH CURSOR IN "OUTPUT ASSIGNMENT#" POSITION ENTER "45"

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT
ASSIGNED AS 'VEHICLE OVERLAP' AS SHOWN BELOW.

PAGE:1 C1 PIN:91 NOT ENABLED
OUTPUT ASSIGNMENT #.....45
FREQUENCY (0=DEFAULT) (0-25.5 HZ)....0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).....0
SELECT ASSIGNMENT:
NOT ENABLED.....Y
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....

OVERLAP 'E' RED

THE OUTPUT IS SET AS "NOT ENABLED" BY DEFAULT. THIS
"Y" WILL REMAIN UNTIL THE OUTPUT IS CHANGED.

ENTER A "Y" FOR VEHICLE OVERLAP.

PAGE:1 C1 PIN:91 NOT ENABLED
SELECT VEHICLE OVERLAP (A=1,P=16)...5
SELECT COLOR(0=RED,1=YEL,2=GRN)....0

WHEN A 'Y' IS ENTERED FOR 'VEHICLE OVERLAP'
THE SCREEN SHOWN ABOVE WILL APPEAR.
ENTER DATA AS SHOWN.
PRESS THE 'ENT' KEY AFTER INPUTTING DATA.
THEN 'ESC'.

PAGE:1 C1 PIN:91 VEHICLE OVERLAP
OUTPUT ASSIGNMENT #.....45
FREQUENCY (0=DEFAULT) (0-25.5 HZ)....0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).....0
SELECT ASSIGNMENT:
NOT ENABLED.....
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....

PRESS "+" KEY FOR OUTPUT 46

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT
ASSIGNED AS 'VEHICLE OVERLAP' AS SHOWN BELOW.

PAGE:1 C1 PIN:93 NOT ENABLED
OUTPUT ASSIGNMENT #.....46
FREQUENCY (0=DEFAULT) (0-25.5 HZ)....0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).....0
SELECT ASSIGNMENT:
NOT ENABLED.....Y
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....

OVERLAP 'E' GREEN

THE OUTPUT IS SET AS "NOT ENABLED" BY DEFAULT. THIS
"Y" WILL REMAIN UNTIL THE OUTPUT IS CHANGED.

ENTER A "Y" FOR VEHICLE OVERLAP.

PAGE:1 C1 PIN:93 NOT ENABLED
SELECT VEHICLE OVERLAP (A=1,P=16)...5
SELECT COLOR(0=RED,1=YEL,2=GRN)....2

WHEN A 'Y' IS ENTERED FOR 'VEHICLE OVERLAP'
THE SCREEN SHOWN ABOVE WILL APPEAR.
ENTER DATA AS SHOWN.
PRESS THE 'ENT' KEY AFTER INPUTTING DATA.
THEN 'ESC'.

PAGE:1 C1 PIN:93 VEHICLE OVERLAP
OUTPUT ASSIGNMENT #.....46
FREQUENCY (0=DEFAULT) (0-25.5 HZ)....0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).....0
SELECT ASSIGNMENT:
NOT ENABLED.....
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....

WITH CURSOR IN "OUTPUT ASSIGNMENT#" POSITION ENTER "54"

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT
ASSIGNED AS 'VEHICLE OVERLAP' AS SHOWN BELOW.

PAGE:1 C1 PIN:101 CONTROLLER FLASH
OUTPUT ASSIGNMENT #.....54
FREQUENCY (0=DEFAULT) (0-25.5 HZ)....0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).....0
SELECT ASSIGNMENT:
NOT ENABLED.....
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....Y
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....

OVERLAP 'E' YELLOW

ENTER A "Y" FOR VEHICLE OVERLAP.

PAGE:1 C1 PIN:101 CONTROLLER FLASH
SELECT VEHICLE OVERLAP (A=1,P=16)...5
SELECT COLOR(0=RED,1=YEL,2=GRN)....1

WHEN A 'Y' IS ENTERED FOR 'VEHICLE OVERLAP'
THE SCREEN SHOWN ABOVE WILL APPEAR.
ENTER DATA AS SHOWN.
PRESS THE 'ENT' KEY AFTER INPUTTING DATA.
THEN 'ESC'.

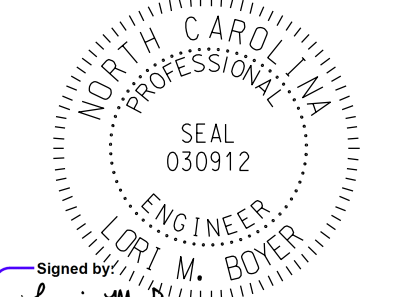
PAGE:1 C1 PIN:101 VEHICLE OVERLAP
OUTPUT ASSIGNMENT #.....54
FREQUENCY (0=DEFAULT) (0-25.5 HZ)....0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH).....0
SELECT ASSIGNMENT:
NOT ENABLED.....
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....

OUTPUT PROGRAMMING COMPLETE

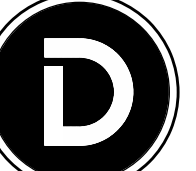
THIS ENTRY IS EXISTING BY DEFAULT.

Electrical Details - Sheet 5 of 6

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

 750 N. Greenfield Pkwy, Garner, NC 27529	ELECTRICAL AND PROGRAMMING DETAILS FOR:		NC 53 (Western Boulevard) at SR 2714 (Jacksonville Parkway)/ Gateway North		 SIGNED BY: Lori M. Boyer 07/07/2025
	Division 03		Onslow County Jacksonville		
	PLAN DATE: May 2025	REVIEWED BY: L. Boyer			
	PREPARED BY: J. Dollarhite	REVIEWED BY:			
	REVISIONS		INIT.	DATE	
SIGNATURE		DATE			
SIG. INVENTORY NO.		03-0822			

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0822
DESIGNED: May 2025
SEALED: 07/07/2025
REVISED: N/A

Project #: 230907

DAVENPORT
HOME OFFICE:
119 BROOKSTOWN AVENUE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1639 www.davenportnc.com
NCBELS FIRM LICENSE NO. C-2522

EMERGENCY VEHICLE PREEMPTION
PROGRAMMING DETAIL

(program controller as shown below)

From Main Menu press 'A' (Preemption), then '1' (Standard Preemptions). Press 'NEXT' as needed to advance to Preempts 3, 4, 5, and 6.

PREEMPTION #3			SETTINGS (NEXT:1-10)															
INTERVAL/TIMING			CLEAR/DWELL PHASES															
GRN	YEL	RED	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	255	0.0	0.0															
2	0	0.0	0.0	X	X													
3	0	0.0	0.0															
4	0	0.0	0.0															
5	1	0.0	0.0															

EXIT CALLS		OPTIONS												
PRIORITY (Y/N TO SELECT)		MED												
DELAY TIMER (0-255 SEC)		0												
MIN GREEN BEFORE PRE (0= DEFAULT)		1												
PED CLEAR BEFORE PRE (0= DEFAULT)		0												
YELLOW CLEAR BEFORE PRE (0= DEFAULT)		.0.0												
RED CLEAR BEFORE PRE (0= DEFAULT)		0.0												
DWELL MIN TIMER (0-255 SEC)		12												
DWELL MAX TIMER (0=OFF,1-255MIN)		2												
DWELL HOLD-OVER TIMER (0-255)		0												
LATCH CALL?		N												
LINK TO NEXT PREEMPT?		N												
ENABLE BACKUP PROTECTION?		N												
HOLD CLEAR 1 PHASES DURING DELAY?		...N												
FAST GREEN FLASH DWELL PHASES?		N												
PED CLEARANCE THROUGH YELLOW?		Y												
INHIBIT OVERLAP GREEN EXTENSION?		N												
SERVICE DURING SOFTWARE FLASH?		N												
REST IN RED DURING DWELL INTERVAL?		..N												
FLASH DWELL INTERVAL?		N												
ALLOW PEDS IN DWELL INTERVAL?		N												
RE-TIME DWELL INTERVAL?		N												
OVERLAPS:		ABCDEFGHIJKLMNOP												
DWELL INT FLASH YELLOW														
OMIT OVERLAPS:		X												

PRESS 'NEXT'

PREEMPTION #4			SETTINGS (NEXT:1-10)															
INTERVAL/TIMING			CLEAR/DWELL PHASES															
GRN	YEL	RED	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	255	0.0	0.0	X	X													
2	0	0.0	0.0															
3	0	0.0	0.0															
4	0	0.0	0.0															
5	1	0.0	0.0															

EXIT CALLS		OPTIONS												
PRIORITY (Y/N TO SELECT)		MED												
DELAY TIMER (0-255 SEC)		0												
MIN GREEN BEFORE PRE (0= DEFAULT)		1												
PED CLEAR BEFORE PRE (0= DEFAULT)		0												
YELLOW CLEAR BEFORE PRE (0= DEFAULT)		.0.0												
RED CLEAR BEFORE PRE (0= DEFAULT)		0.0												
DWELL MIN TIMER (0-255 SEC)		12												
DWELL MAX TIMER (0=OFF,1-255MIN)		2												
DWELL HOLD-OVER TIMER (0-255)		0												
LATCH CALL?		N												
LINK TO NEXT PREEMPT?		N												
ENABLE BACKUP PROTECTION?		N												
HOLD CLEAR 1 PHASES DURING DELAY?		...N												
FAST GREEN FLASH DWELL PHASES?		N												
PED CLEARANCE THROUGH YELLOW?		Y												
INHIBIT OVERLAP GREEN EXTENSION?		N												
SERVICE DURING SOFTWARE FLASH?		N												
REST IN RED DURING DWELL INTERVAL?		..N												
FLASH DWELL INTERVAL?		N												
ALLOW PEDS IN DWELL INTERVAL?		N												
RE-TIME DWELL INTERVAL?		N												
OVERLAPS:		ABCDEFGHIJKLMNOP												
DWELL INT FLASH YELLOW														
OMIT OVERLAPS:														

PRESS 'NEXT'

Program extend time on optical detector unit for 2.0 sec.

PREEMPTION #5			SETTINGS (NEXT:1-10)															
INTERVAL/TIMING			CLEAR/DWELL PHASES															
GRN	YEL	RED	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	255	0.0	0.0															
2	0	0.0	0.0	X														
3	0	0.0	0.0															
4	0	0.0	0.0															
5	1	0.0	0.0															

EXIT CALLS		OPTIONS												
PRIORITY (Y/N TO SELECT)		MED												
DELAY TIMER (0-255 SEC)		0												
MIN GREEN BEFORE PRE (0= DEFAULT)		1												
PED CLEAR BEFORE PRE (0= DEFAULT)		0												
YELLOW CLEAR BEFORE PRE (0= DEFAULT)		.0.0												
RED CLEAR BEFORE PRE (0= DEFAULT)		0.0												
DWELL MIN TIMER (0-255 SEC)		7												
DWELL MAX TIMER (0=OFF,1-255MIN)		2												
DWELL HOLD-OVER TIMER (0-255)		0												
LATCH CALL?		N												
LINK TO NEXT PREEMPT?		N												
ENABLE BACKUP PROTECTION?		N												
HOLD CLEAR 1 PHASES DURING DELAY?		...N												
FAST GREEN FLASH DWELL PHASES?		N												
PED CLEARANCE THROUGH YELLOW?		Y												
INHIBIT OVERLAP GREEN EXTENSION?		N												
SERVICE DURING SOFTWARE FLASH?		N												
REST IN RED DURING DWELL INTERVAL?		..N												
FLASH DWELL INTERVAL?		N												
ALLOW PEDS IN DWELL INTERVAL?		N												
RE-TIME DWELL INTERVAL?		N												
OVERLAPS:		ABCDEFGHIJKLMNOP												
DWELL INT FLASH YELLOW														
OMIT OVERLAPS:		X												

PRESS 'NEXT'

PREEMPTION #6			SETTINGS (NEXT:1-10)															
INTERVAL/TIMING			CLEAR/DWELL PHASES															
GRN	YEL	RED	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	255	0.0	0.0															
2	0	0.0	0.0	X														
3	0	0.0	0.0															
4	0	0.0	0.0															
5	1	0.0	0.0															

EXIT CALLS		OPTIONS												
PRIORITY (Y/N TO SELECT)		MED												
DELAY TIMER (0-255 SEC)		0												
MIN GREEN BEFORE PRE (0= DEFAULT)		1												
PED CLEAR BEFORE PRE (0= DEFAULT)		0												
YELLOW CLEAR BEFORE PRE (0= DEFAULT)		.0.0												
RED CLEAR BEFORE PRE (0= DEFAULT)		0.0												
DWELL MIN TIMER (0-255 SEC)		7												
DWELL MAX TIMER (0=OFF,1-255MIN)		2												
DWELL HOLD-OVER TIMER (0-255)		0												
LATCH CALL?		N												
LINK TO NEXT PREEMPT?		N												
ENABLE BACKUP PROTECTION?		N												
HOLD CLEAR 1 PHASES DURING DELAY?		...N												
FAST GREEN FLASH DWELL PHASES?		N												
PED CLEARANCE THROUGH YELLOW?		Y												
INHIBIT OVERLAP GREEN EXTENSION?		N												
SERVICE DURING SOFTWARE FLASH?		N												
REST IN RED DURING DWELL INTERVAL?		..N												
FLASH DWELL INTERVAL?		N												
ALLOW PEDS IN DWELL INTERVAL?		N												
RE-TIME DWELL INTERVAL?		N												
OVERLAPS:		ABCDEFGHIJKLMNOP												
DWELL INT FLASH YELLOW														
OMIT OVERLAPS:														

PROGRAMMING COMPLETE

FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
- REMOVE FLASHER UNIT 2.

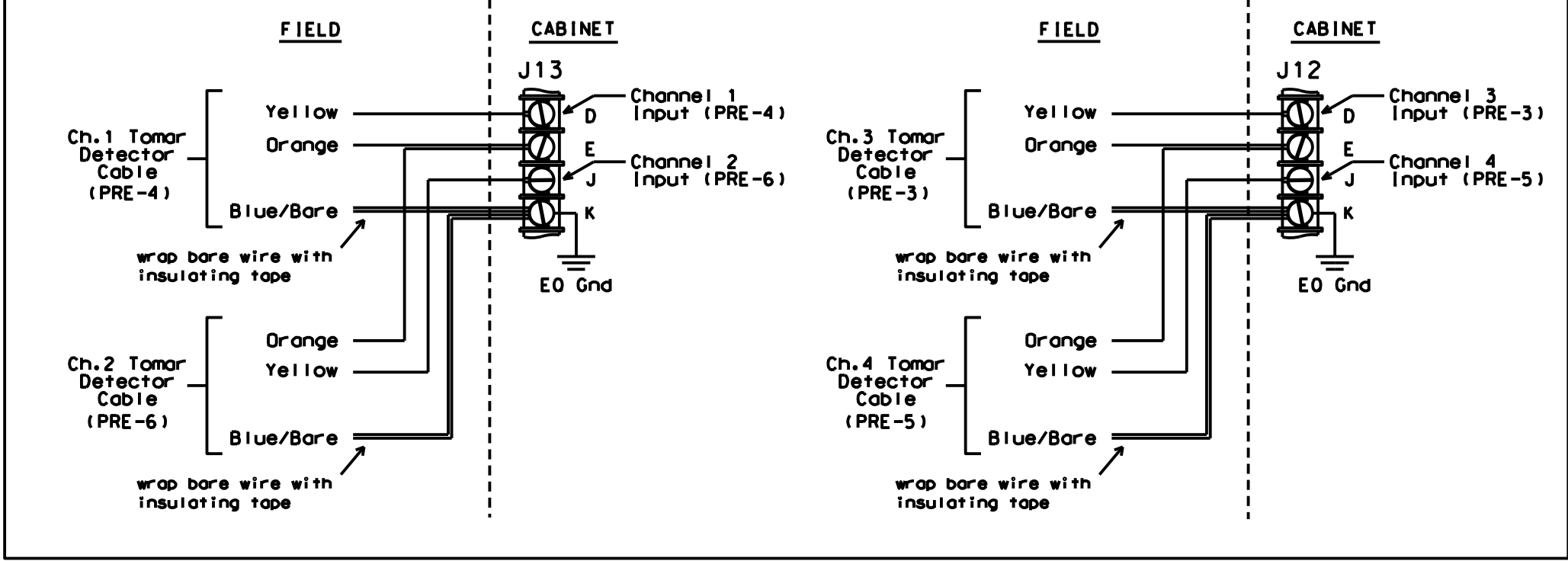
THE CHANGES LISTED ABOVE TIE ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

COUNTDOWN PEDESTRIAN SIGNAL OPERATION

Countdown Ped Signals are required to display timing only during Ped Clearance Interval. Consult Ped Signal Module user's manual for instructions on selecting this feature.

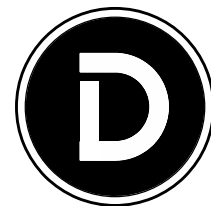
TYPICAL TOMAR FIELD WIRE DETAIL

(input file, rear view)



Project #: 230907

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0822
DESIGNED: May 2025
SEALED: 07/07/2025
REVISED: N/A



DAVENPORT

HOME OFFICE:
119 BROOKSTOWN AVENUE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportworld.com
NCBELS FIRM LICENSE NO. C-2622

Electrical Details - Sheet 6 of 6

ELECTRICAL AND PROGRAMMING
DETAILS FOR:



NC 53 (Western Boulevard)

at
SR 2714 (Jacksonville Parkway)/
Gateway North

Division 03 Onslow County Jacksonville

PLAN DATE: May 2025 REVIEWED BY: L. Boyer

PREPARED BY: J. Dollarhite REVIEWED BY:

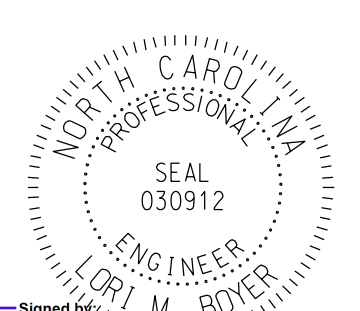
REVISIONS INIT. DATE

SIGNATURE DATE

SIG. INVENTORY NO. 03-0822

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL

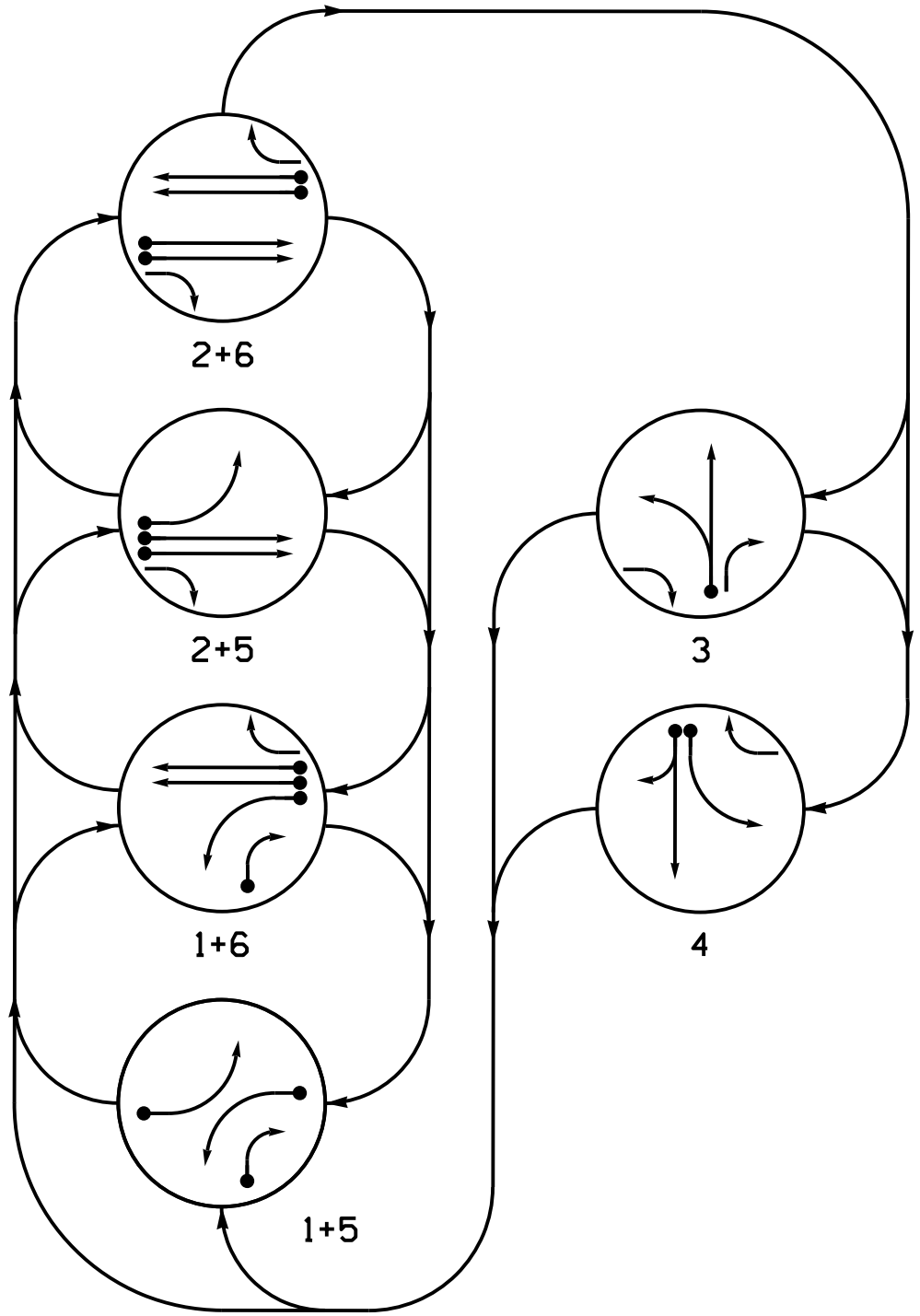


Signed by: Lori M. Boyer 07/07/2025

SIGNATURE DATE

SIG. INVENTORY NO. 03-0822

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

EV PREEMPT PHASES
(Medium Priority)

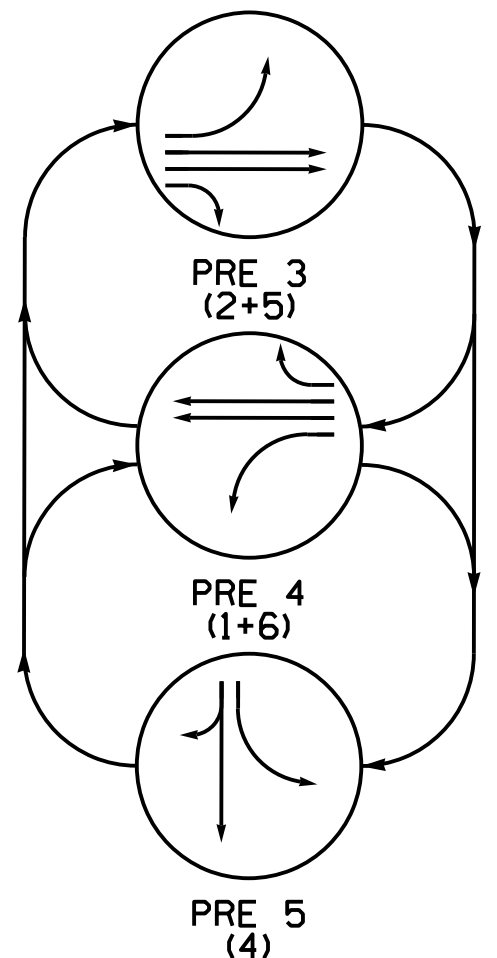
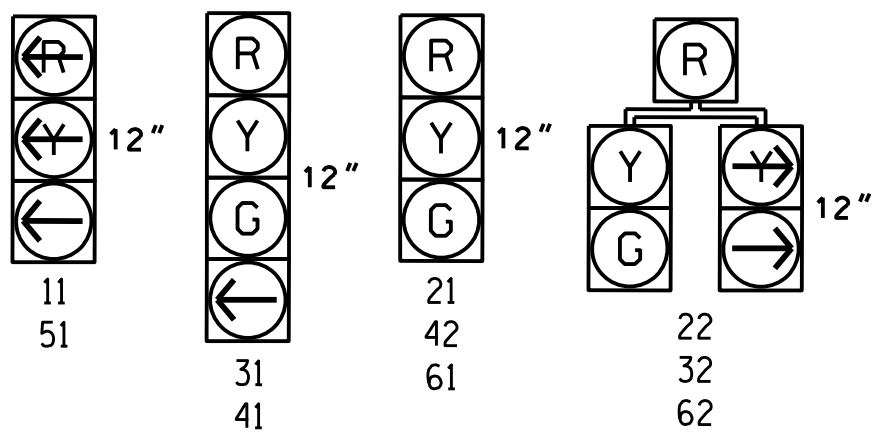


TABLE OF OPERATION

SIGNAL FACE	PHASE											
	1+5	1+6	2+5	2+6	3	4	PRE 3	PRE 4	PRE 5	Full	Left	Right
11												
21	R	R	G	G	R	R	G	R	R	R		
22	R	R	G	G	R	R	G	R	R	R		
31	R	R	R	R	G	R	R	R	R	R		
32	R	R	R	R	G	R	R	R	R	R		
41	R	R	R	R	R	G	R	R	R	G	R	
42	R	R	R	R	R	G	R	R	R	G	R	
51												
61	R	G	R	G	R	R	R	G	R	R		
62	R	G	R	G	R	R	R	G	R	R		

SIGNAL FACE I.D.

All Heads L.E.D.



MICROWAVE DETECTION

FUNCTION	Sensor 1 (2A)		Sensor 2 (6A)	
Channel	1		1	
Phase	2		6	
Direction of Travel	EB		WB	
Type	PRIORITY		PRIORITY	
Level	2	QUEUE	2	QUEUE
Discovery Zone(ft)	<750		<750	
Detection Zone/Range(ft)	600-100	150-100	600-100	150-100
Enable Speed	Y	Y	Y	Y
Speed Range (mph)	35-100	1-35	35-100	1-35
Enable Estimated Time of Arrival	Y	N	Y	N
Estimated Time of Arrival (sec)	2.5-5.5	-	2.5-5.5	-

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS				DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP
1A	*	0	*	Y	1	Y	Y	-	-	-	-
1B	*	0	*	Y	1	Y	Y	-	-	15	-
3A	*	0	*	Y	3	Y	Y	-	-	-	-
4A	*	0	*	Y	4	Y	Y	-	-	3	-
4B	*	0	*	Y	4	Y	Y	-	-	10	-
5A	*	0	*	Y	5	Y	Y	-	-	-	-

* Multizone Microwave Detection Zones

6 Phase
Fully Actuated w/EV Preempt
Jacksonville Signal System

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- The order of phase 3 and phase 4 may be reversed.
- Set all detector units to presence mode.
- This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
- This intersection features a GPS preemption system.
- This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Closed loop system data: Controller Asset # 0896.

LEGEND

PROPOSED	EXISTING

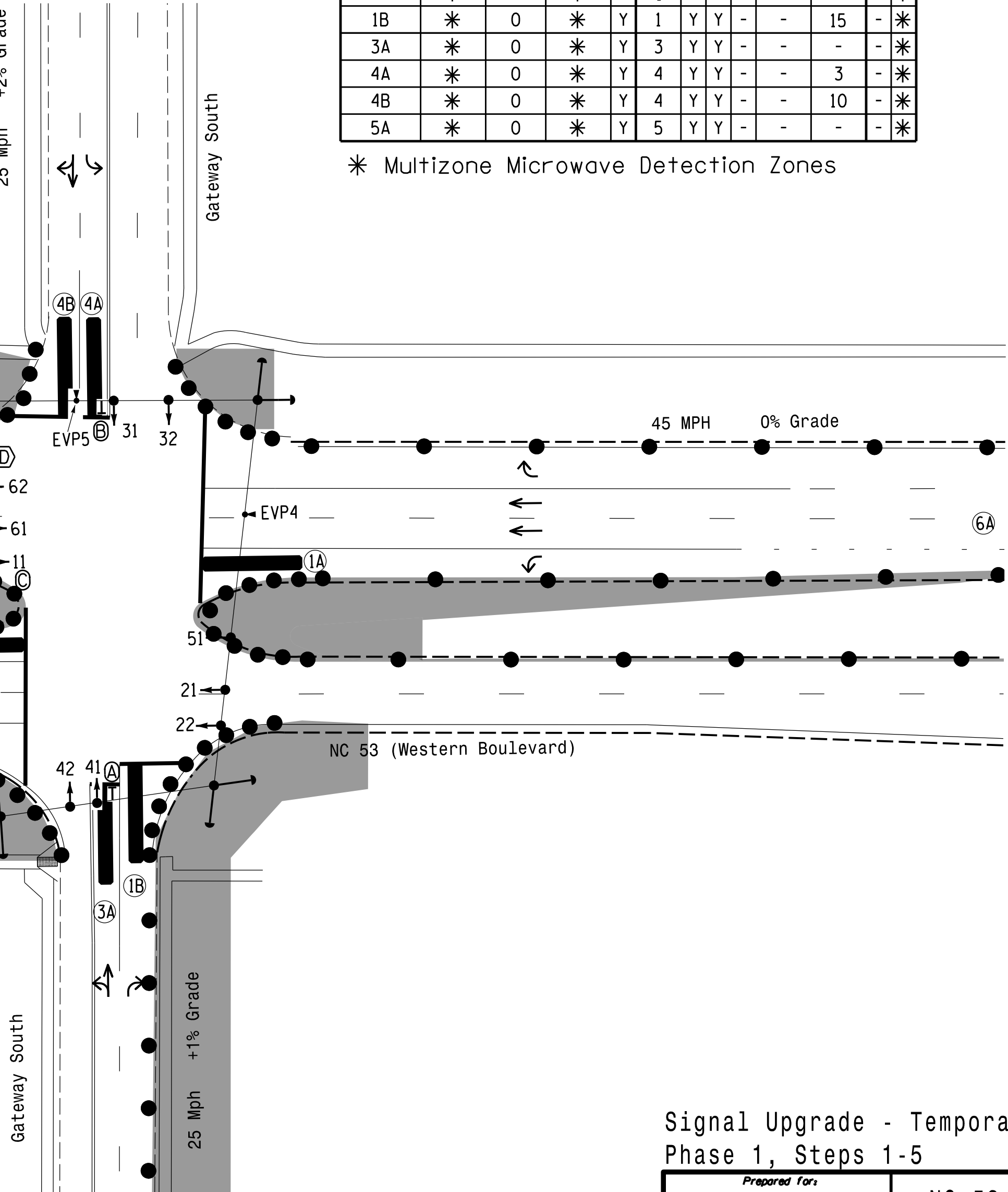
OASIS 2070 TIMING CHART						
FEATURE	PHASE					
	1	2	3	4	5	6
Min Green 1 *	7	12	7	7	7	12
Extension 1 *	2.0	2.0	2.0	2.0	2.0	2.0
Max Green 1 *	20	90	30	30	20	90
Yellow Clearance	3.0	4.5	3.1	3.1	3.0	4.5
Red Clearance	3.2	1.0	3.5	3.4	3.2	1.0
Walk 1 *	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-
Seconds Per Actuation *	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW
Dual Entry	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

OASIS 2070 EV PREEMPTION			
FUNCTION	PRE 3	PRE 4	PRE 5
Interval 1 - Dwell Green	255	255	255
Interval 1 - Dwell Yellow	0.0*	0.0*	0.0*
Interval 1 - Dwell Red	0.0*	0.0*	0.0*
Interval 5 - Exit Green	0	0	0
Interval 5 - Yellow	0.0	0.0	0.0
Interval 5 - Red	0.0	0.0	0.0
Priority	Medium	Medium	Medium
Delay Time	0.0	0.0	0.0
Min Green Before Pre	1	1	1
Ped Clear Before Pre	0 *	0 *	0 *
Yellow Clear Before Pre	0.0*	0.0*	0.0*
Red Clear Before Pre	0.0*	0.0*	0.0*
Dwell Min Time	12	12	7
Enable Backup Protection	N	N	N
Ped Clear Through Yellow	N	N	N
Preempt Extend**	2	2	2
Omit Overlaps	-	A	B

* Time defaults to time used for phase during normal operation

** Program Timing on Optical Detection Unit

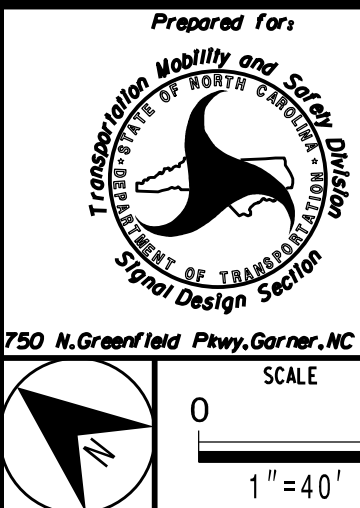


Signal Upgrade - Temporary Design 1
Phase 1, Steps 1-5

Project #: 230907

DAVENPORT

HOME OFFICE:
119 BROOKSTOWN AVENUE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportworld.com
NCBELS FIRM LICENSE NO. C-2522



NC 53 (Western Boulevard) at Gateway South	
Division 3	Onslow County Jacksonville
PLAN DATE: May 2025	REVIEWED BY: D. Bennett
PREPARED BY: B. Dowell	REVIEWED BY:
REVISIONS	
INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

SEAL 020608

ENGINEER DONALD R. BENNETT

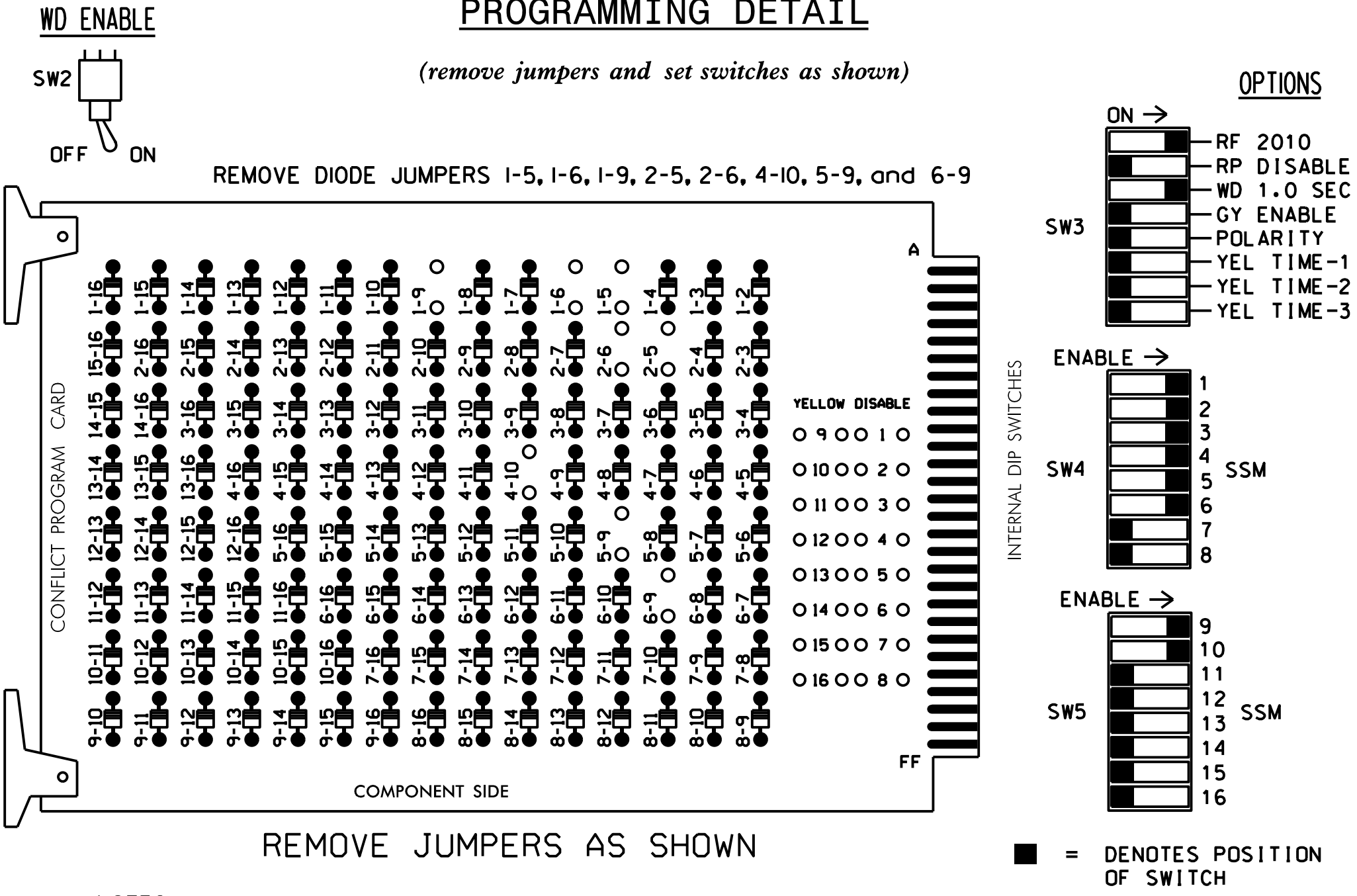
Signature: Donald R. Bennett II

20260870104084FC...

SIGNATURE DATE

SIG. INVENTORY NO. 03-089611

16 CHANNEL CONFLICT MONITOR
PROGRAMMING DETAIL



NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Make sure jumpers SEL2-SEL5 are present on the monitor board.

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels tie unused red monitor inputs 7,8,11,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
- Enable Simultaneous Gap-Out for all phases.
- Program Phases 2 and 6 for First Phases
- Remove Yellow Flash Programming and remove Phases 2 and 6 from Startup in Green
- The cabinet and controller are part of the Jacksonville Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 (12-STD, 6-AUX)
LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S9,S10
PHASES USED.....1,2,3,4,5,6
OVERLAP "A".....1
OVERLAP "B".....4
OVERLAP "C".....NOT USED
OVERLAP "D".....NOT USED

PROJECT REFERENCE NO.	SHEET NO.
U-5789	Sig. 3.1

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P	S9	S10	S11	S12	S13	S14
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	21,22	NU	31	32	22	41	42	NU	51	61,62	NU	NU	NU	32	62	NU	NU
RED		128		116	116		101	101		134				*	*			
YELLOW		129		117	117		102	102		135								
GREEN		130		118	118		103	103		136								
RED ARROW	125								131					A122	A125			
YELLOW ARROW	126					117			132					A123	A126			
GREEN ARROW	127			118		118	103		133									
⬇																		
⬇																		

NU = NOT USED

* Denotes install load resistor. See Load Resistor Installation Detail this page.

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
PHASE: :12345678910111213141516
VEH OVL PARENTS::X
VEH OVL NOT VEH::
VEH OVL NOT PED::
VEH OVL GRN EXT::
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW - GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
PHASE: :12345678910111213141516
VEH OVL PARENTS: X
VEH OVL NOT VEH::
VEH OVL NOT PED::
VEH OVL GRN EXT::
STARTUP COLOR: - RED - YELLOW - GREEN
FLASH COLORS: - RED - YELLOW - GREEN
SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).....0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0

OVERLAP PROGRAMMING COMPLETE

SPECIAL DETECTOR NOTE

Install a multizone microwave detection zone for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

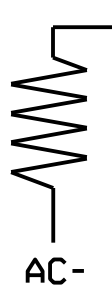
GPS PREEMPTION INSTALLATION NOTE

Install GPS preemption system. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting location to accomplish the preemption schemes shown on the signal design plans.

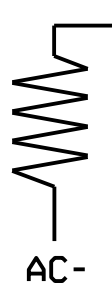
LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



OVERLAP A RED TERMINAL
TERMINAL (A121)



OVERLAP B RED TERMINAL
TERMINAL (A124)

AC-

AC-

Project #: 230907



THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0896T1
DESIGNED: May 2025
SEALED: 7/2/2025
REVISED: N/A

Electrical Details

Temperary Design 1 Phase 1 - Sheet 1 of 2

ELECTRICAL AND PROGRAMMING
DETAILS FOR:



NC 53 (Western Boulevard)
at
Gateway South

Division 3 Onslow County Jacksonville

PLAN DATE: May 2025 REVIEWED BY: D. Bennett

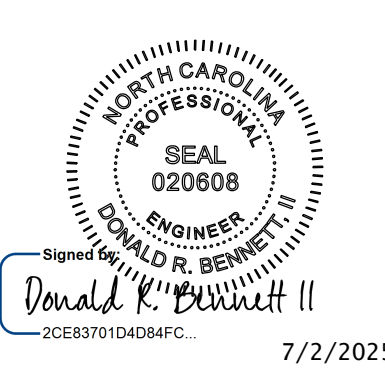
PREPARED BY: B. Dowell REVIEWED BY:

REVISIONS INIT. DATE

SIGNATURE DATE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL

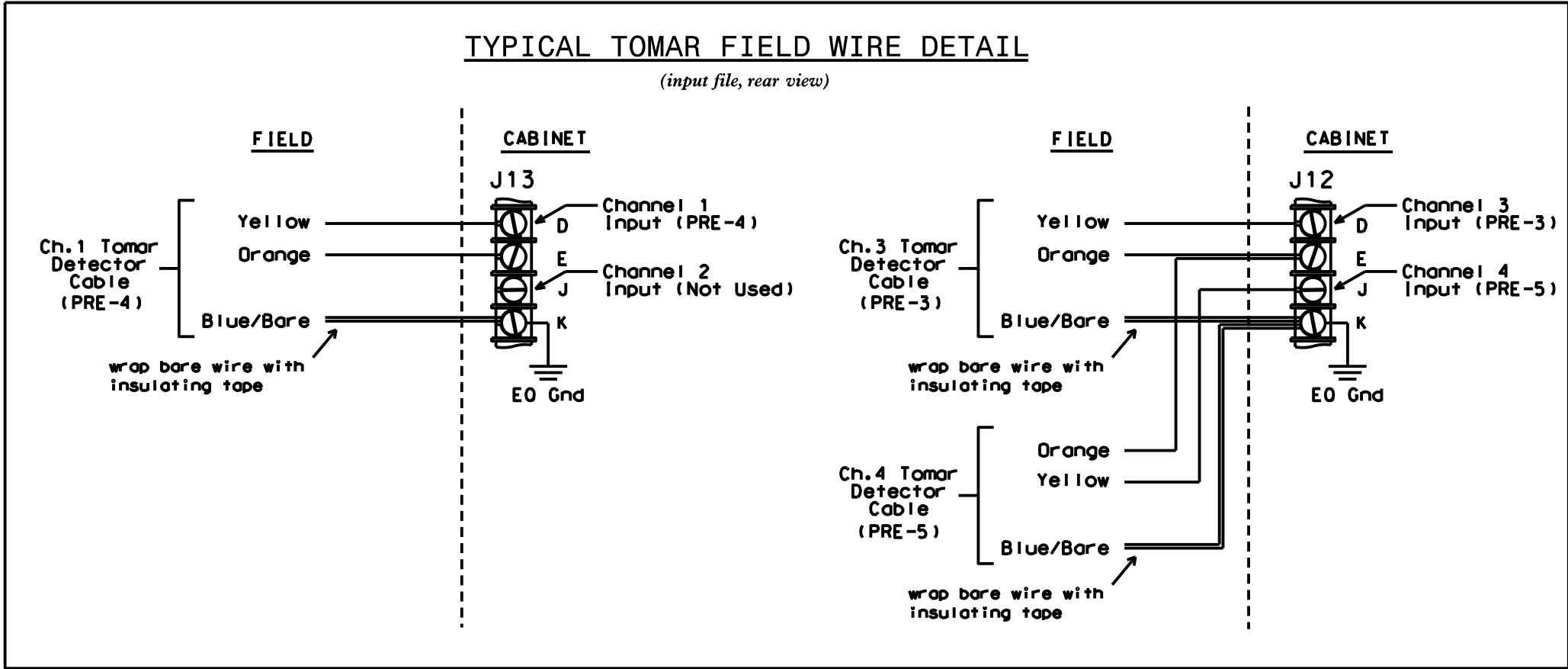


SIG. INVENTORY NO. 03-0896T1

EMERGENCY VEHICLE PREEMPTION PROGRAMMING DETAIL

(program controller as shown below)

From Main Menu press 'A' (Preemption), then '1' (Standard Preemptions). Press 'NEXT' as needed to advance to Preempt 3.



PREEMPTION #3				SETTINGS (NEXT:1-10)											
INTERVAL/TIMING				CLEAR/DWELL PHASES											
GRN	YEL	RED		1	2	3	4	5	6	7	8	9	10	11	12
1	255	0.0	0.0												
2	0	0.0	0.0												
3	0	0.0	0.0												
4	0	0.0	0.0												
5	0	0.0	0.0												
EXIT CALLS				OPTIONS											
				PRIORITY (Y/N TO SELECT)MED											
				DELAY TIMER (0-255 SEC)0											
				MIN GREEN BEFORE PRE (0= DEFAULT)....1											
				PED CLEAR BEFORE PRE (0= DEFAULT)....0											
				YELLOW CLEAR BEFORE PRE (0= DEFAULT).0.0											
				RED CLEAR BEFORE PRE (0= DEFAULT)...0.0											
				DWELL MIN TIMER (0-255 SEC)12											
				DWELL MAX TIMER (0=OFF,1-255MIN)0											
				DWELL HOLD-OVER TIMER (0-255)0											
				LATCH CALL?N											
				LINK TO NEXT PREEMPT?N											
				ENABLE BACKUP PROTECTION?N											
				HOLD CLEAR 1 PHASES DURING DELAY? ...N											
				FAST GREEN FLASH DWELL PHASES?N											
				PED CLEARANCE THROUGH YELLOW?N											
				INHIBIT OVERLAP GREEN EXTENSION?N											
				SERVICE DURING SOFTWARE FLASH?N											
				REST IN RED DURING DWELL INTERVAL? ..N											
				FLASH DWELL INTERVAL?N											
				ALLOW PEDS IN DWELL INTERVAL?N											
				RE-TIME DWELL INTERVAL?N											
				OVERLAPS: ABCDEFGHIJKLMNOP											
				DWELL INT FLASH YELLOW											
				OMIT OVERLAPS:											

PRESS 'NEXT'

PREEMPTION #4				SETTINGS (NEXT:1-10)											
INTERVAL/TIMING				CLEAR/DWELL PHASES											
GRN	YEL	RED		1	2	3	4	5	6	7	8	9	10	11	12
1	255	0.0	0.0												
2	0	0.0	0.0												
3	0	0.0	0.0												
4	0	0.0	0.0												
5	0	0.0	0.0												
EXIT CALLS				OPTIONS											
				PRIORITY (Y/N TO SELECT)MED											
				DELAY TIMER (0-255 SEC)0											
				MIN GREEN BEFORE PRE (0= DEFAULT)....1											
				PED CLEAR BEFORE PRE (0= DEFAULT)....0											
				YELLOW CLEAR BEFORE PRE (0= DEFAULT).0.0											
				RED CLEAR BEFORE PRE (0= DEFAULT)...0.0											
				DWELL MIN TIMER (0-255 SEC)12											
				DWELL MAX TIMER (0=OFF,1-255MIN)0											
				DWELL HOLD-OVER TIMER (0-255)0											
				LATCH CALL?N											
				LINK TO NEXT PREEMPT?N											
				ENABLE BACKUP PROTECTION?N											
				HOLD CLEAR 1 PHASES DURING DELAY? ...N											
				FAST GREEN FLASH DWELL PHASES?N											
				PED CLEARANCE THROUGH YELLOW?N											
				INHIBIT OVERLAP GREEN EXTENSION?N											
				SERVICE DURING SOFTWARE FLASH?N											
				REST IN RED DURING DWELL INTERVAL? ..N											
				FLASH DWELL INTERVAL?N											
				ALLOW PEDS IN DWELL INTERVAL?N											
				RE-TIME DWELL INTERVAL?N											
				OVERLAPS: ABCDEFGHIJKLMNOP											
				DWELL INT FLASH YELLOW											
				OMIT OVERLAPS: X											

PRESS 'NEXT'

PREEMPTION #5				SETTINGS (NEXT:1-10)											
INTERVAL/TIMING				CLEAR/DWELL PHASES											
GRN	YEL	RED		1	2	3	4	5	6	7	8	9	10	11	12
1	255	0.0	0.0												
2	0	0.0	0.0												
3	0	0.0	0.0												
4	0	0.0	0.0												
5	0	0.0	0.0												
EXIT CALLS															
				OPTIONS											
PRIORITY (Y/N TO SELECT)				MED											
DELAY TIMER (0-255 SEC)				0											
MIN GREEN BEFORE PRE (0= DEFAULT)				1											
PED CLEAR BEFORE PRE (0= DEFAULT)				0											
YELLOW CLEAR BEFORE PRE (0= DEFAULT)				.0.0											
RED CLEAR BEFORE PRE (0= DEFAULT)				...0.0											
DWELL MIN TIMER (0-255 SEC)				7											
DWELL MAX TIMER (0-OFF,1-255MIN)				0											
DWELL HOLD-OVER TIMER (0-255)				0											
LATCH CALL?				N											
LINK TO NEXT PREEMPT?				N											
ENABLE BACKUP PROTECTION?				N											
HOLD CLEAR 1 PHASES DURING DELAY?				...N											
FAST GREEN FLASH DWELL PHASES?				N											
PED CLEARANCE THROUGH YELLOW?				N											
INHIBIT OVERLAP GREEN EXTENSION?				...N											
SERVICE DURING SOFTWARE FLASH?				N											
REST IN RED DURING DWELL INTERVAL?				..N											
FLASH DWELL INTERVAL?				N											
ALLOW PEDS IN DWELL INTERVAL?				N											
RE-TIME DWELL INTERVAL?				N											
OVERLAPS:				ABCDEF GHIJ KLMNOP											
DWELL INT FLASH YELLOW															
OMIT OVERLAPS:				X											

PROJECT REFERENCE NO.	SHEET NO.
U-5789	Sig 4.0

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART											
INDUCTIVE LOOPS				DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP NEW CARD
1A	*	0	*	Y	1	Y	Y	-	-	15*	- *
1B	*	0	*	Y	6*	Y	Y	-	-	-	- *
3A	*	0	*	Y	3	Y	Y	-	-	3	- *
3B	*	0	*	Y	3	Y	Y	-	-	-	- *
4A	*	0	*	Y	4	Y	Y	-	-	3	- *
5A	*	0	*	Y	5	Y	Y	-	-	15*	- *
5B	*	0	*	Y	2*	Y	Y	-	-	-	- *

* Disable Delay During Alternate Phasing Operation.
Disable Phase call for loop during Alternate Phasing Operation.
* Multizone Microwave Detection

MICROWAVE DETECTION				
FUNCTION	Sensor 1 (2A)		Sensor 2 (6A)	
Channel	1		1	
Phase	2		6	
Direction of Travel	EB		WB	
Type	PRIORITY		PRIORITY	
Level	2	QUEUE	2	QUEUE
Discovery Zone(ft)	<750		<750	
Detection ZoneRange(ft)	600-100	150-100	600-100	150-100
Enable Speed	Y	Y	Y	Y
Speed Range (mph)	35-100	1-35	35-100	1-35
Enable Estimated Time of Arrival	Y	N	Y	N
Estimated Time of Arrival (sec)	2.5-5.5	-	2.5-5.5	-

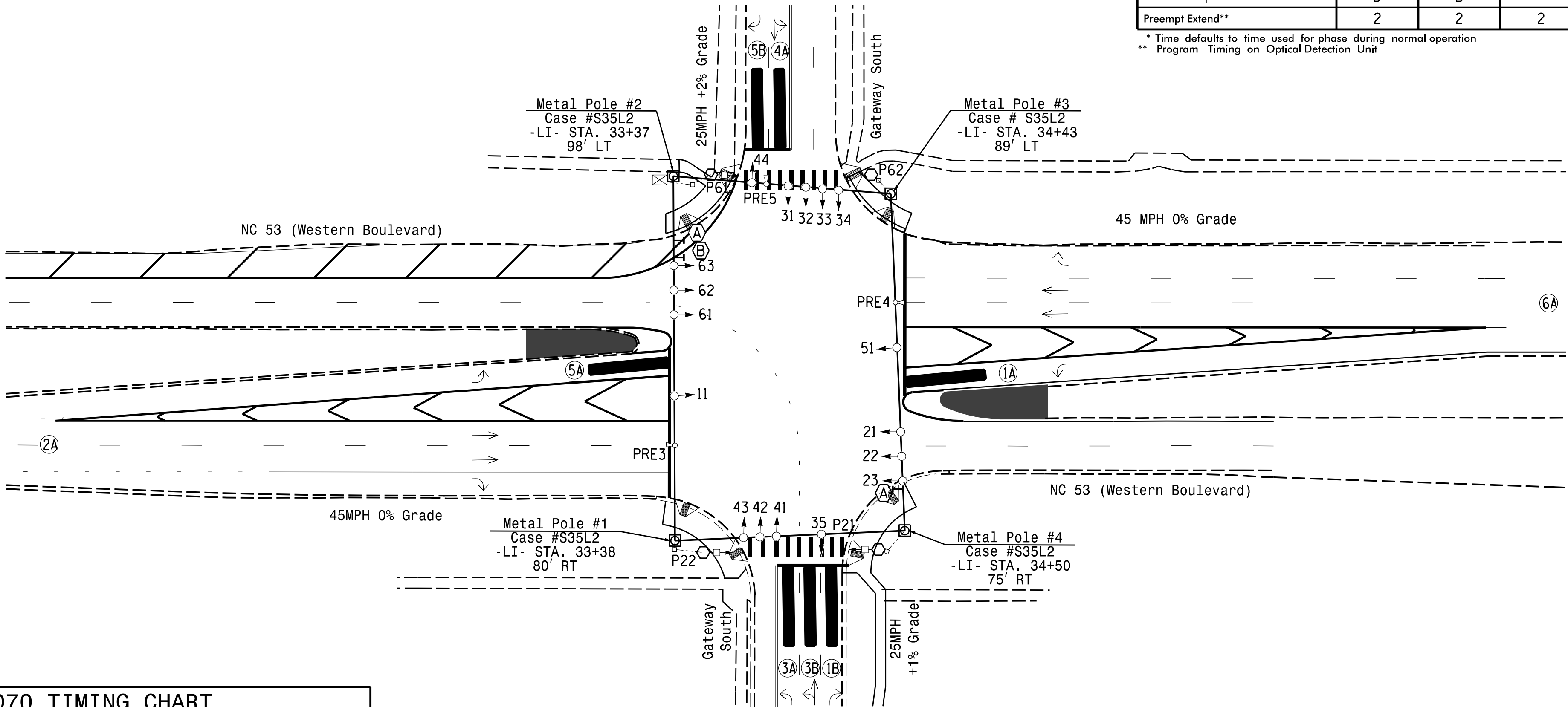
OASIS 2070 EV PREEMPT			
FUNCTION	PRE 3	PRE 4	PRE 5
Interval 1 – Dwell Green	255	255	255
Interval 1 – Dwell Yellow	0.0*	0.0*	0.0*
Interval 1 – Dwell Red	0.0*	0.0*	0.0*
Interval 5 – Exit Green	1	1	1
Interval 5 – Yellow	0.0	0.0	0.0
Interval 5 – Red	0.0	0.0	0.0
Exit Phase(s)	2+6	2+6	4
Priority	Medium	Medium	Medium
Delay Time	0.0	0.0	0.0
Min Green Before Pre	1	1	1
Ped Clear Before Pre	0 *	0 *	0 *
Yellow Clear Before Pre	0.0*	0.0*	0.0*
Red Clear Before Pre	0.0*	0.0*	0.0*
Dwell Min Time	12	12	7
Dwell Max Time (Minutes)	2	2	2
Enable Backup Protection	N	N	N
Ped Clear Through Yellow	Y	Y	Y
Omit Overlaps	D	B	-
Preempt Extend**	2	2	2

* Time defaults to time used for phase during normal operation
** Program Timing on Optical Detection Unit

6 Phase
Fully Actuated
w/ EV Preempt
Jacksonville Signal System

NOTES

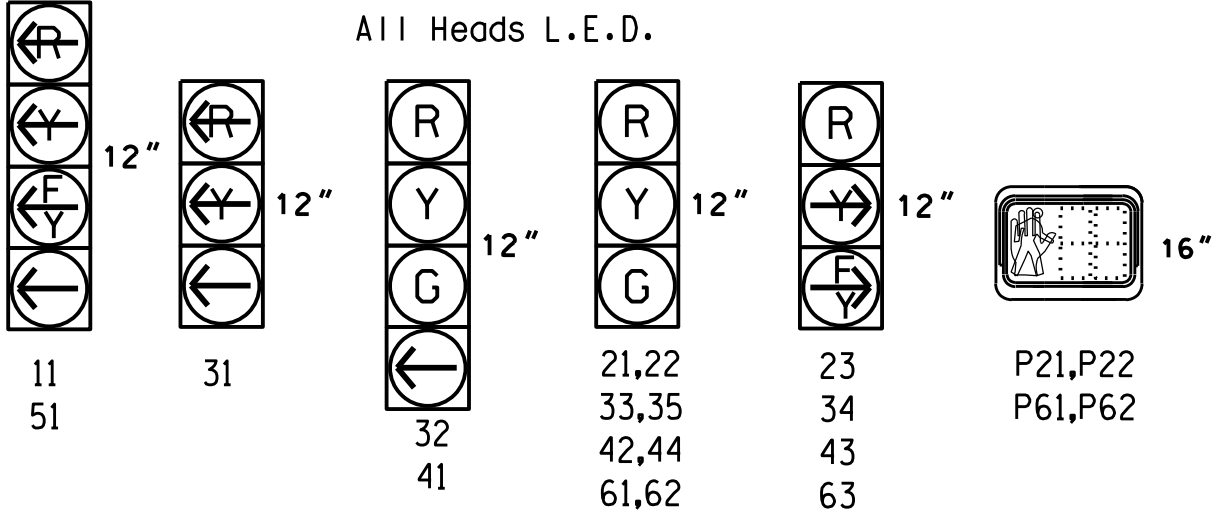
- Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- The order of phase 3 and phase 4 may be reversed.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.
- Program pedestrian heads to countdown the flashing "Don't Walk" time only.
- This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.
- This intersection features a GPS preemption system.
- This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Closed loop system data: Asset #0896.



OASIS 2070 TIMING CHART						
FEATURE	PHASE					
	1	2	3	4	5	6
Min Green 1 *	7	12	7	7	7	12
Extension 1 *	2.0	2.0	2.0	2.0	2.0	2.0
Max Green 1 *	20	90	30	30	20	90
Yellow Clearance	3.0	4.5	3.1	3.1	3.0	4.5
Red Clearance	3.3	1.9	4.1	4.1	3.4	1.9
Walk 1 *	-	13	-	-	-	12
Don't Walk 1	-	11	-	-	-	11
Advanced Walk	-	6	-	-	-	5
Seconds Per Actuation *	-	-	-	-	-	-
Max Variable Initial *	-	-	-	-	-	-
Time Before Reduction *	-	-	-	-	-	-
Time To Reduce *	-	-	-	-	-	-
Minimum Gap	-	-	-	-	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW
Dual Entry	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

SIGNAL FACE I.D.



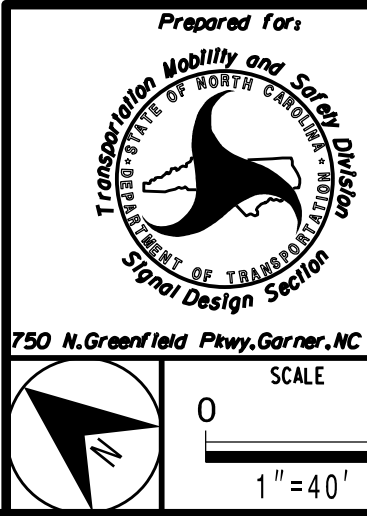
LEGEND	
PROPOSED	EXISTING

Signal Upgrade - Final Design - Sheet 1 of 2

Project #: 230907

DAVENPORT

HOME OFFICE:
119 BROOKSTOWN AVENUE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportworld.com
NCBELS FIRM LICENSE NO. C-2622



NC 53 (Western Boulevard)
at
Gateway South

Division 3 Onslow County Jacksonville
PLAN DATE: May 2025 REVIEWED BY: D. Bennett
PREPARED BY: B. Dowell REVIEWED BY:

REVISIONS	INIT.	DATE

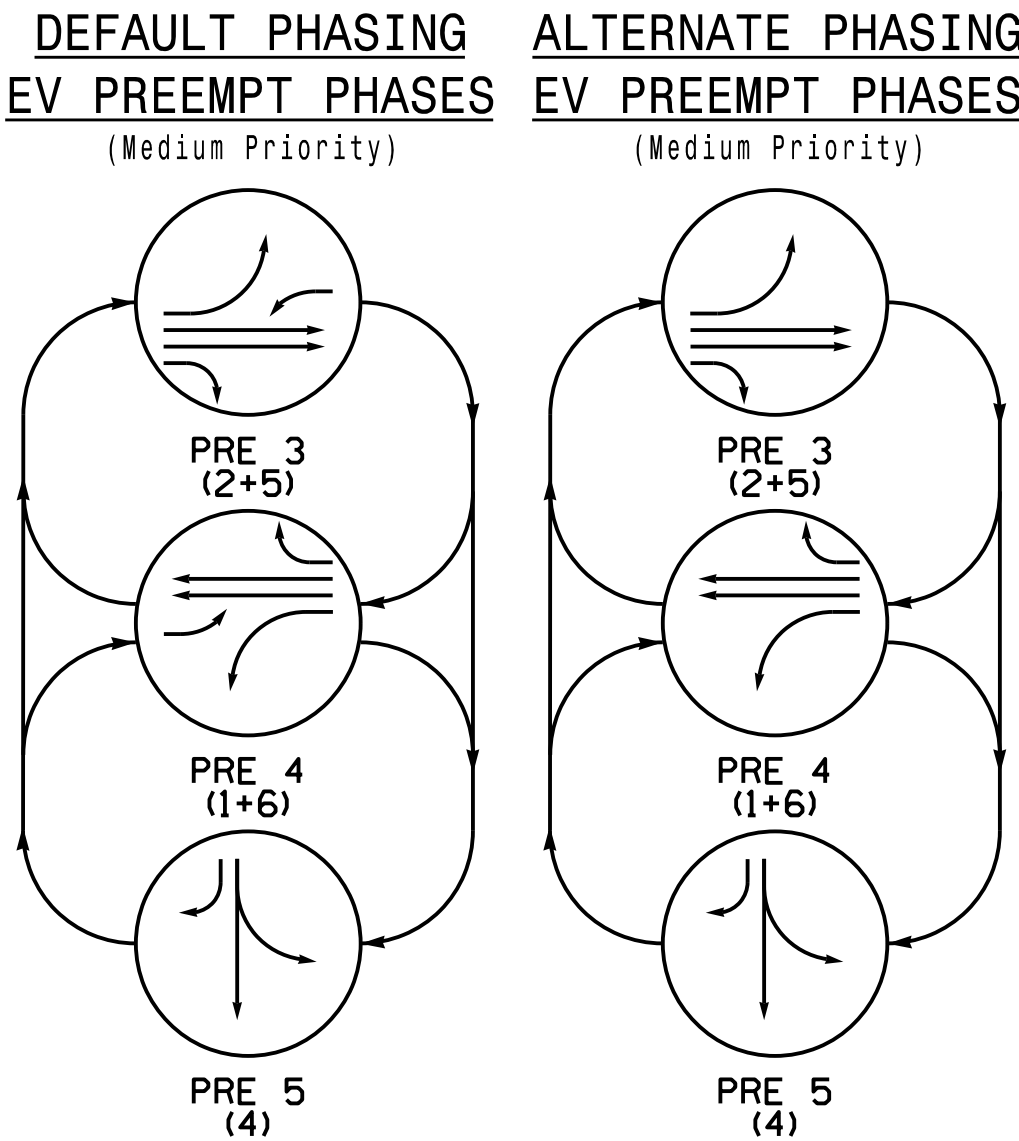
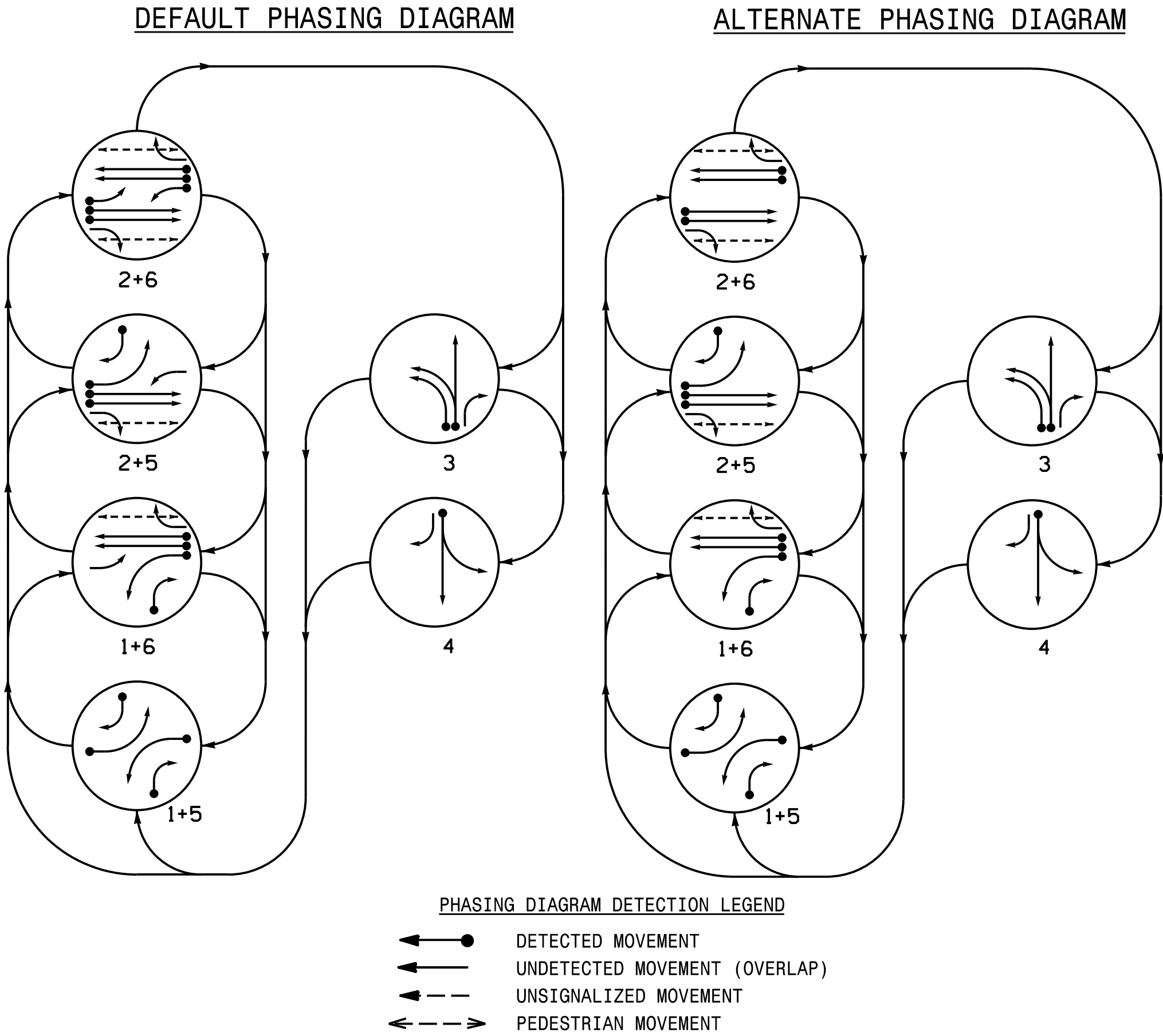
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL

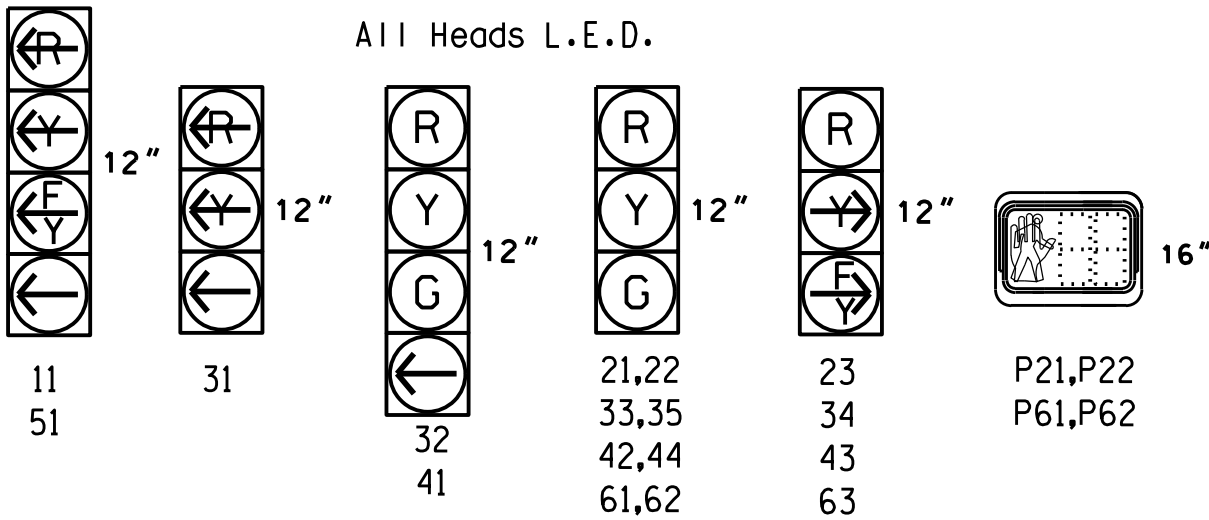
Donald R. Bennett
Professional Engineer
State of North Carolina
License No. 020608

Signed By: *Donald R. Bennett*
7/2/2025

SIGNATURE DATE
SIG. INVENTORY NO. 03-0896



SIGNAL FACE I.D.



- 6 Phase
Fully Actuated
w/ EV Preempt
Jacksonville Signal System

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024.

2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.

3. Phase 1 and/or phase 5 may be lagged.

4. The order of phase 3 and phase 4 may be reversed.

5. Set all detector units to presence mode.

6. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.

7. Omit "WALK" and flashing "DON'T WALK" with no pedestrian calls.

8. Program pedestrian heads to countdown the flashing "Don't Walk" time only.

9. This intersection features an optical preemption system. Shown locations of optical detectors are conceptual only.

10. This intersection features a GPS preemption system.

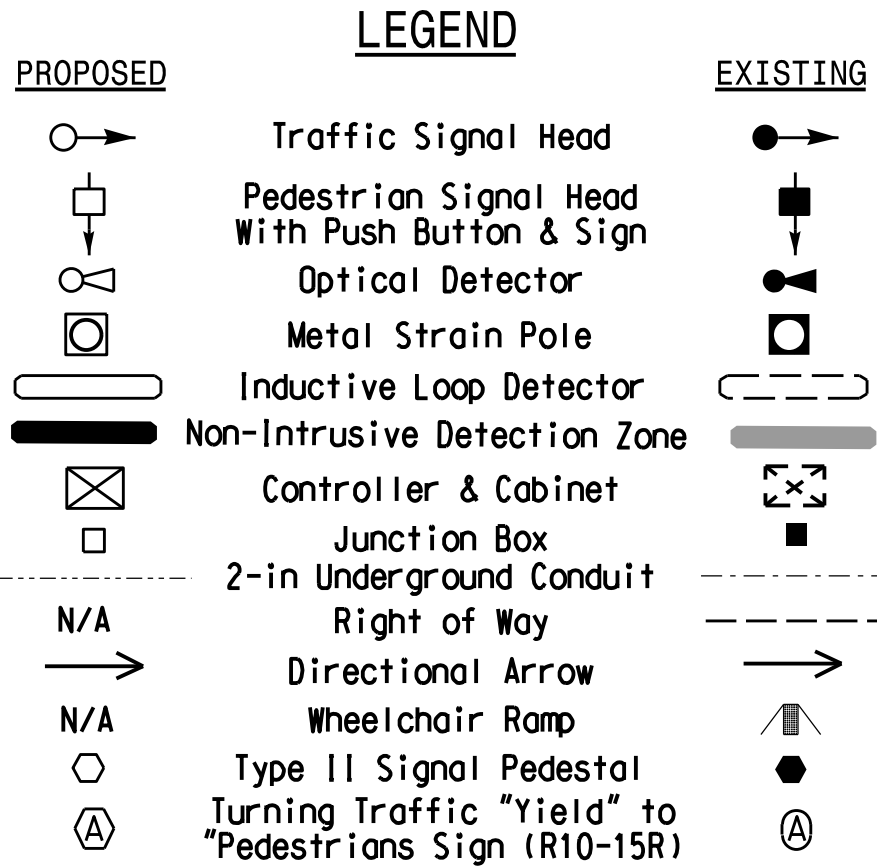
11. This intersection uses multi-zone microwave detection. Install detectors according to the manufacturer's instructions to achieve the desired detection.

12. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

13. Closed loop system data: Asset #0896.

DEFAULT PHASING TABLE OF OPERATION									
SIGNAL FACE	PHASE								
	1 + 5	1 + 6	2 + 5	2 + 6	3	4	PRE 3	PRE 4	PRE 5
11	←	←	←	←	←	←	←	←	←
21,22	R	R	G	G	R	R	G	R	R
23	R	R	←	←	R	R	←	R	R
31	←	←	←	←	←	←	←	←	←
32	R	R	R	R	G	R	R	R	R
33,35	R	R	R	R	G	R	R	R	R
34	←	←	R	R	←	R	R	R	R
41	R	R	R	R	R	G	R	R	G
42,44	R	R	R	R	R	G	R	R	G
43	←	←	←	←	R	←	←	←	←
51	←	←	←	←	←	←	←	←	←
61,62	R	G	R	G	R	R	R	G	R
63	R	←	R	←	R	R	←	R	R
P21,P22	DW	DW	W	W	DW	DW	DW	DW	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DW	DRK

ALTERNATE PHASING TABLE OF OPERATION									
SIGNAL FACE	PHASE								
	1 + 5	1 + 6	2 + 5	2 + 6	3	4	PRE 3	PRE 4	PRE 5
11	←	←	←	←	←	←	←	←	←
21,22	R	R	G	G	R	R	G	R	R
23	R	R	←	←	R	R	←	R	R
31	←	←	←	←	←	←	←	←	←
32	R	R	R	R	G	R	R	R	R
33,35	R	R	R	R	G	R	R	R	R
34	←	←	R	R	←	R	R	R	R
41	R	R	R	R	R	G	R	R	G
42,44	R	R	R	R	R	G	R	R	G
43	←	←	←	←	R	←	←	←	←
51	←	←	←	←	←	←	←	←	←
61,62	R	G	R	G	R	R	R	G	R
63	R	←	R	←	R	R	←	R	R
P21,P22	DW	DW	W	W	DW	DW	DW	DW	DRK
P61,P62	DW	W	DW	W	DW	DW	DW	DW	DRK



Signal Upgrade - Final Design - Sheet 2 of 2

Project #: 230907

DAVENPORT

HOME OFFICE:
119 BROOKSTOWN AVENUE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportworld.com
NCBELS FIRM LICENSE NO. C-2622

750 N. Greenfield Pkwy, Garner, NC 27529

Prepared for
TRANSPORTATION MOBILITY AND SAFETY DIVISION
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section

NC 53 (Western Boulevard)
at
Gateway South

Division 3 Onslow County Jacksonville

PLAN DATE: May 2025 REVIEWED BY: D. Bennett

PREPARED BY: B. Dowell REVIEWED BY:

REVISIONS

INIT. DATE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL

SEAL
020608

ENGINEER
DONALD R. BENNETT II
20CB8701D4084FC...

7/2/2025

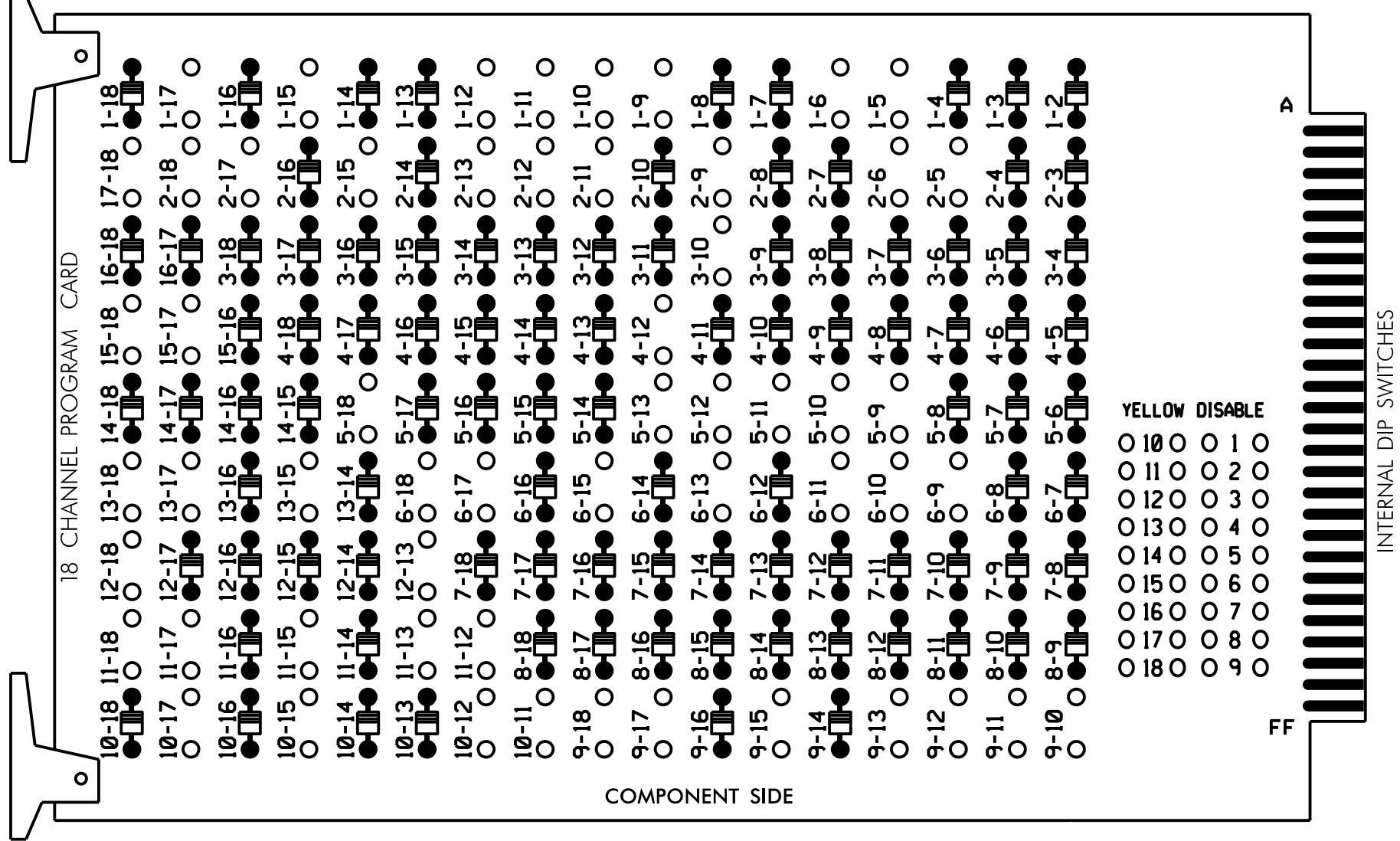
SIGNATURE DATE

SIG. INVENTORY NO. 03-0896

18 CHANNEL IP CONFLICT MONITOR
PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

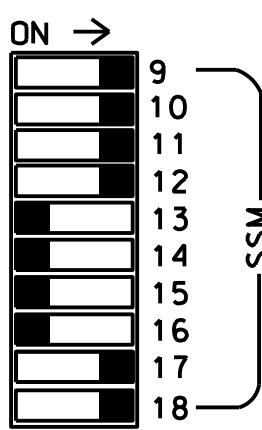
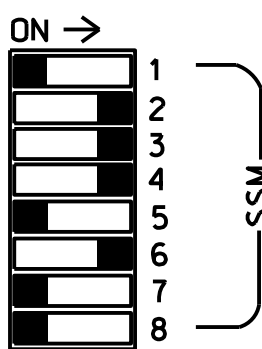
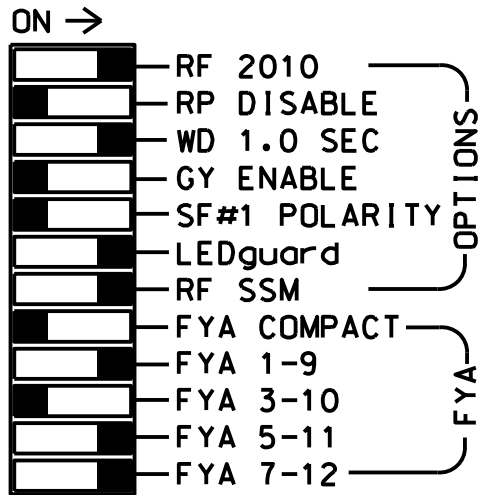
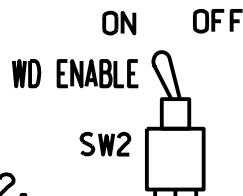
REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-10, 1-11, 1-12, 1-15, 1-17, 2-5, 2-6, 2-9, 2-11, 2-12, 2-13, 2-15, 2-17, 2-18, 3-10, 4-12, 5-9, 5-10, 5-11, 5-12, 5-13, 5-18, 6-9, 6-10, 6-11, 6-13, 6-15, 6-17, 6-18, 9-10, 9-11, 9-12, 9-13, 9-15, 9-17, 9-18, 10-11, 10-12, 10-15, 10-17, 11-12, 11-13, 11-15, 11-17, 11-18 12-13, 12-18, 13-15, 13-17, 13-18, 15-17, 15-18 and 17-18.



REMOVE JUMPERS AS SHOWN

NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.
3. Ensure that Red Enable is active at all times during normal operation.
4. Integrate monitor with Ethernet network in cabinet.



■ = DENOTES POSITION OF SWITCH

NOTES

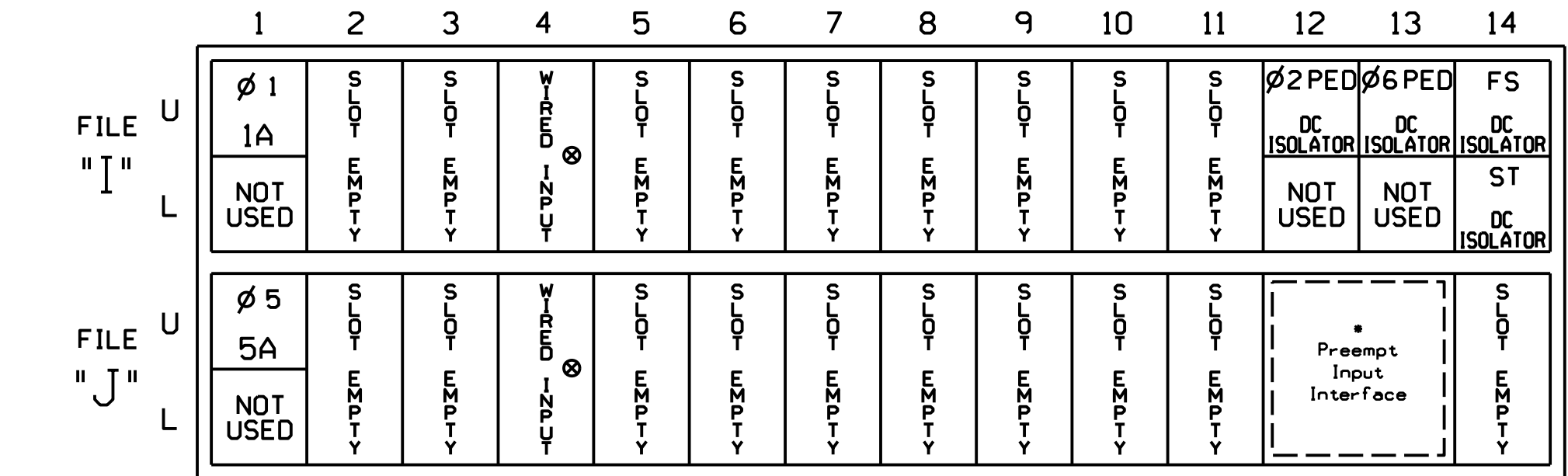
1. To prevent "flash-conflict" problems, insert red flash program blocks for all vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. Enable Simultaneous Gap-Out for all phases.
3. Program phases 2 and 6 as First Phases.
4. Disable all Phases for Yellow Flash and Startup in Green.
5. Program overlap 1, 2, and 5 as Wag Overlaps.
6. The cabinet and controller are part of the Jacksonville Signal System, Asset #0986

EQUIPMENT INFORMATION

CONTROLLER.....2070
CABINET.....332 W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S7,S8,S9.
AUX S1,AUX S2,AUX S3,
AUX S4,AUX S5,AUX S6
PHASES USED.....1,2,2PED,3,4,5,6,6PED
OVERLAP "A".....1+2
OVERLAP "B".....1+3
OVERLAP "C".....5+6
OVERLAP "D".....4+5
OVERLAP "E".....6
OVERLAP "F".....2

INPUT FILE POSITION LAYOUT

(front view)



EX.: 1A, 2A, ETC. = LOOP NO.'S

⊗ Wired Input - Do not populate slot with detector card

FS = FLASH SENSE
ST = STOP TIME
PRE = PREEMPT

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A ¹	TB2-1,2	I1U	56	18	1	1	Y	Y	-	-	15
	-	J4U	48	10 ★	26	6	Y	Y	-	-	-
	-	I1U	56	18 ★	51	1	Y	Y	-	-	-
5A ²	TB3-1,2	J1U	55	17	5	5	Y	Y	-	-	15
	-	I4U	47	9 ★	22	2	Y	Y	-	-	-
	-	J1U	55	17 ★	55	5	Y	Y	-	-	-
PED PUSH BUTTONS											
P21,P22	TB8-4,6	I12U	67	29	PED 2	2 PED					
P61,P62	TB8-7,9	I13U	68	30	PED 6	6 PED					

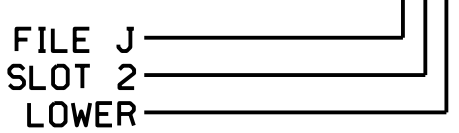
NOTE:

INSTALL DC ISOLATORS IN INPUT FILE SLOTS 112 AND 113.

¹Add jumper from I1-W to J4-W, on rear of input file.
²Add jumper from J1-W to I4-W, on rear of input file.

* See Input Page Assignment programming details on sheets 3 and 4.
* System detector only. Remove the vehicle phase assigned to this detector in the default programming.

INPUT FILE POSITION LEGEND: J2L



SPECIAL DETECTOR NOTE

Install a multizone microve detection zone for vehicle detection. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting locations to accomplish the detection schemes shown on the Signal Design Plans.

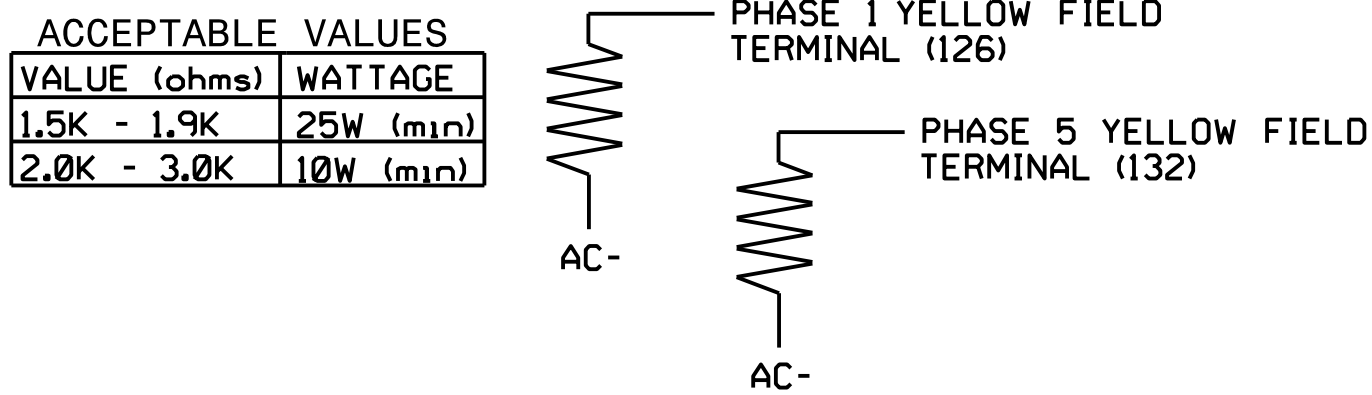
For detection zones 1A and 5A the equipment placement and slots reserved for wired inputs are typical for NCDOT installation. Inputs associated with these slots are compatible with the time of day instructions located on sheets 3 and 4 of the electrical details.

GPS PREEMPTION INSTALLATION NOTE

Install GPS preemption system. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting location to accomplish the preemption schemes shown on the signal design plans.

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)



REMOVE LOAD RESISTORS FROM A121 & A124 IF PRESENT

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S3	S4			S5		S6	S7	S8	S9	S10	S11	S12	AUX S1	AUX S2	AUX S3	AUX S4	AUX S5	AUX S6
CMU CHANNEL NO.	1	2	13	3			4		14	5	6	15	7	8	16	9	10	17	11	12	18
PHASE	1	2	2 PED	3			4		4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	OLE	OLC	OLD	OLF
SIGNAL HEAD NO.	11★	21,22	P21, P22	31	32	33,35	41	42,44	NU	51★	61,62	P61, P62	NU	NU	NU	11★	34★	63★	51★	43★	23★
RED		128			116	116	101	101			134						A124	A111		A101	A104
YELLOW	*	129			117	117	102	102		*	135										
GREEN		130			118	118	103	103			136										
RED ARROW				116												A121			A114		
YELLOW ARROW				117												A122	A125	A112	A115	A102	A105
FLASHING YELLOW ARROW																A123	A126	A113	A116	A103	A106
GREEN ARROW	127			118	118		103			133											
			113									119									
			115									121									

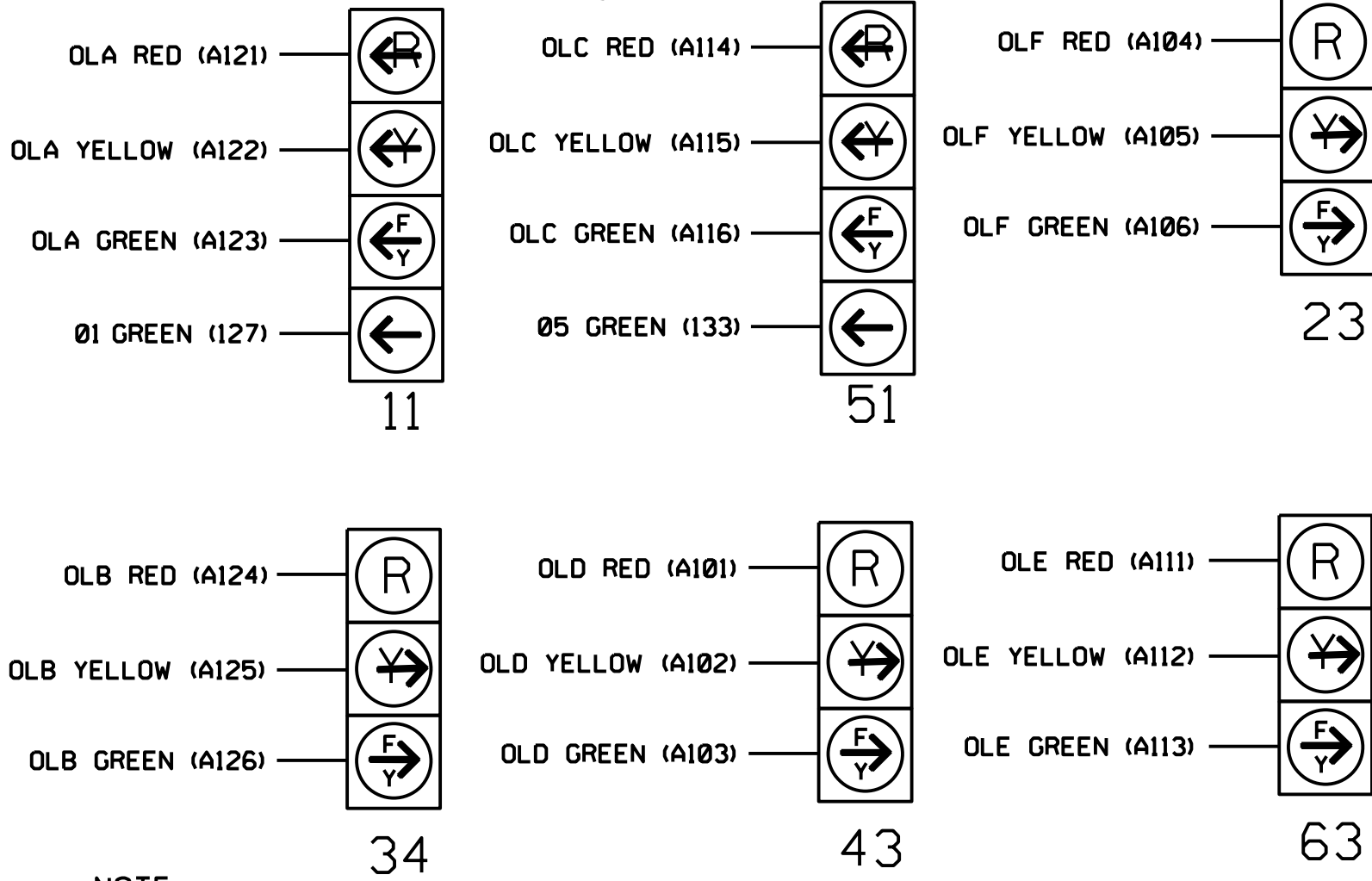
NU = Not Used

* Denotes install load resistor. See load resistor installation detail this sheet.

★ See pictorial of head wiring in detail this sheet.

FYA SIGNAL WIRING DETAIL

(wire signal heads as shown)



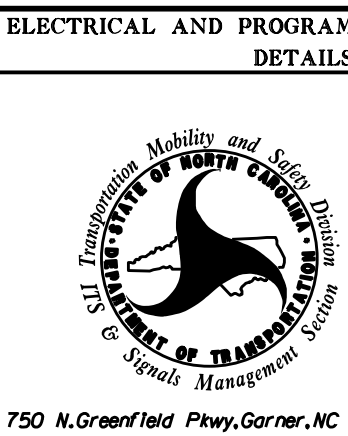
NOTE

The sequence display for signal heads 11 and 51 requires special logic programming. See sheet 6 for programming instructions.

Electrical Details
Final Design- Sheet 1 of 7



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0896
DESIGNED: May 2025
SEALED: 7/2/2025
REVISED: N/A



NC 53 (Western Boulevard)
at
Gateway South

Division 3	Onslow County	Jacksonville
PLAN DATE: May 2025	REVIEWED BY: D. Bennett	
PREPARED BY: B. Dowell	REVIEWED BY:	
REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL	
	
Signed by <i>Donald R. Bennett II</i>	
2CE83701D4084FC...	
7/2/2025	
SIGNATURE	DATE
SIG. INVENTORY NO. 03-0896	

OVERLAP PROGRAMMING DETAIL

FOR DEFAULT PHASING

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS). THEN '1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS

PHASE: 12345678910111213141516

VEH OVL PARENTS: XX

VEH OVL NOT VEH:

VEH OVL NOT PED:

VEH OVL GRN EXT:

STARTUP COLOR: _ RED _ YELLOW _ GREEN

FLASH COLORS: _ RED _ YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)

FLASH YELLOW IN CONTROLLER FLASH?...N

GREEN EXTENSION (0-255 SEC).....0

YELLOW CLEAR (0=PARENT.3-25.5 SEC)..0.0

RED CLEAR (0=PARENT.0.1-25.5 SEC)..0.0

OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'B' SETTINGS

PHASE: 12345678910111213141516

VEH OVL PARENTS: X X

VEH OVL NOT VEH:

VEH OVL NOT PED:

VEH OVL GRN EXT:

STARTUP COLOR: _ RED _ YELLOW _ GREEN

FLASH COLORS: _ RED _ YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)

FLASH YELLOW IN CONTROLLER FLASH?...N

GREEN EXTENSION (0-255 SEC).....0

YELLOW CLEAR (0=PARENT.3-25.5 SEC)..0.0

RED CLEAR (0=PARENT.0.1-25.5 SEC)..0.0

OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'C' SETTINGS

PHASE: 12345678910111213141516

VEH OVL PARENTS: XX

VEH OVL NOT VEH:

VEH OVL NOT PED:

VEH OVL GRN EXT:

STARTUP COLOR: _ RED _ YELLOW _ GREEN

FLASH COLORS: _ RED _ YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)

FLASH YELLOW IN CONTROLLER FLASH?...N

GREEN EXTENSION (0-255 SEC).....0

YELLOW CLEAR (0=PARENT.3-25.5 SEC)..0.0

RED CLEAR (0=PARENT.0.1-25.5 SEC)..0.0

OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'D' SETTINGS

PHASE: 12345678910111213141516

VEH OVL PARENTS: XX

VEH OVL NOT VEH:

VEH OVL NOT PED:

VEH OVL GRN EXT:

STARTUP COLOR: _ RED _ YELLOW _ GREEN

FLASH COLORS: _ RED _ YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)

FLASH YELLOW IN CONTROLLER FLASH?...N

GREEN EXTENSION (0-255 SEC).....0

YELLOW CLEAR (0=PARENT.3-25.5 SEC)..0.0

RED CLEAR (0=PARENT.0.1-25.5 SEC)..0.0

OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'E' SETTINGS

PHASE: 12345678910111213141516

VEH OVL PARENTS: X

VEH OVL NOT VEH:

VEH OVL NOT PED:

VEH OVL GRN EXT:

STARTUP COLOR: _ RED _ YELLOW _ GREEN

FLASH COLORS: _ RED _ YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)

FLASH YELLOW IN CONTROLLER FLASH?...N

GREEN EXTENSION (0-255 SEC).....0

YELLOW CLEAR (0=PARENT.3-25.5 SEC)..0.0

RED CLEAR (0=PARENT.0.1-25.5 SEC)..0.0

OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 1: VEHICLE OVERLAP 'F' SETTINGS

PHASE: 12345678910111213141516

VEH OVL PARENTS: X

VEH OVL NOT VEH:

VEH OVL NOT PED:

VEH OVL GRN EXT:

STARTUP COLOR: _ RED _ YELLOW _ GREEN

FLASH COLORS: _ RED _ YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)

FLASH YELLOW IN CONTROLLER FLASH?...N

GREEN EXTENSION (0-255 SEC).....0

YELLOW CLEAR (0=PARENT.3-25.5 SEC)..0.0

RED CLEAR (0=PARENT.0.1-25.5 SEC)..0.0

OUTPUT AS PHASE # (0=NONE, 1-16)....0

OVERLAP PROGRAMMING COMPLETE

OVERLAP PROGRAMMING DETAIL

FOR ALTERNATE PHASING

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS). THEN '1' (VEHICLE OVERLAP SETTINGS). THEN PRESS 'NEXT TO ADVANCE TO PAGE 2.

PAGE 2: VEHICLE OVERLAP 'A' SETTINGS

PHASE: 12345678910111213141516

VEH OVL PARENTS: X

VEH OVL NOT VEH:

VEH OVL NOT PED:

VEH OVL GRN EXT:

STARTUP COLOR: _ RED _ YELLOW _ GREEN

FLASH COLORS: _ RED _ YELLOW _ GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)

FLASH YELLOW IN CONTROLLER FLASH?...N

GREEN EXTENSION (0-255 SEC).....0

YELLOW CLEAR (0=PARENT.3-25.5 SEC)..0.0

RED CLEAR (0=PARENT.0.1-25.5 SEC)..0.0

OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 2: VEHICLE OVERLAP 'B' SETTINGS

PHASE: 12345678910111213141516

VEH OVL PARENTS: X X

VEH OVL NOT VEH:

VEH OVL NOT PED:

VEH OVL GRN EXT:

STARTUP COLOR: _ RED _ YELLOW _ GREEN

FLASH COLORS: _ RED _ YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)

FLASH YELLOW IN CONTROLLER FLASH?...N

GREEN EXTENSION (0-255 SEC).....0

YELLOW CLEAR (0=PARENT.3-25.5 SEC)..0.0

RED CLEAR (0=PARENT.0.1-25.5 SEC)..0.0

OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 2: VEHICLE OVERLAP 'C' SETTINGS

PHASE: 12345678910111213141516

VEH OVL PARENTS: X

VEH OVL NOT VEH:

VEH OVL NOT PED:

VEH OVL GRN EXT:

STARTUP COLOR: _ RED _ YELLOW _ GREEN

FLASH COLORS: _ RED _ YELLOW _ GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)

FLASH YELLOW IN CONTROLLER FLASH?...N

GREEN EXTENSION (0-255 SEC).....0

YELLOW CLEAR (0=PARENT.3-25.5 SEC)..0.0

RED CLEAR (0=PARENT.0.1-25.5 SEC)..0.0

OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 2: VEHICLE OVERLAP 'D' SETTINGS

PHASE: 12345678910111213141516

VEH OVL PARENTS: XX

VEH OVL NOT VEH:

VEH OVL NOT PED:

VEH OVL GRN EXT:

STARTUP COLOR: _ RED _ YELLOW _ GREEN

FLASH COLORS: _ RED _ YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)

FLASH YELLOW IN CONTROLLER FLASH?...N

GREEN EXTENSION (0-255 SEC).....0

YELLOW CLEAR (0=PARENT.3-25.5 SEC)..0.0

RED CLEAR (0=PARENT.0.1-25.5 SEC)..0.0

OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 2: VEHICLE OVERLAP 'E' SETTINGS

PHASE: 12345678910111213141516

VEH OVL PARENTS: X

VEH OVL NOT VEH:

VEH OVL NOT PED:

VEH OVL GRN EXT:

STARTUP COLOR: _ RED _ YELLOW _ GREEN

FLASH COLORS: _ RED _ YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)

FLASH YELLOW IN CONTROLLER FLASH?...N

GREEN EXTENSION (0-255 SEC).....0

YELLOW CLEAR (0=PARENT.3-25.5 SEC)..0.0

RED CLEAR (0=PARENT.0.1-25.5 SEC)..0.0

OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+'

PAGE 2: VEHICLE OVERLAP 'F' SETTINGS

PHASE: 12345678910111213141516

VEH OVL PARENTS: X

VEH OVL NOT VEH:

VEH OVL NOT PED:

VEH OVL GRN EXT:

STARTUP COLOR: _ RED _ YELLOW _ GREEN

FLASH COLORS: _ RED _ YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)

FLASH YELLOW IN CONTROLLER FLASH?...N

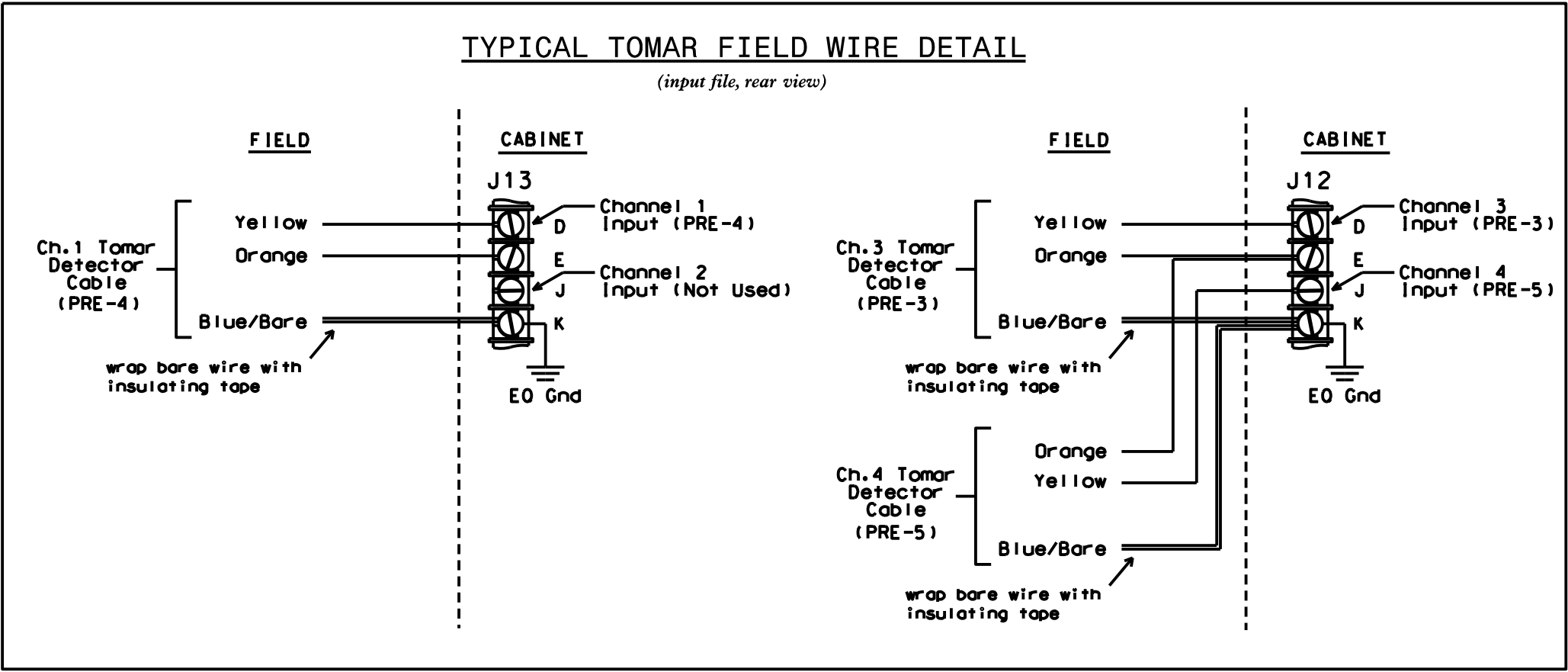
GREEN EXTENSION (0-255 SEC).....0

YELLOW CLEAR (0=PARENT.3-25.5 SEC)..0.0

RED CLEAR (0=PARENT.0.1-25.5 SEC)..0.0

OUTPUT AS PHASE # (0=NONE, 1-16)....0

OVERLAP PROGRAMMING COMPLETE



Project #: 230907

D

DAVENPORT

HOME OFFICE:
119 BROOKSTOWN AVE. SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportnc.com
NCBELS FIRM LICENSE NO. C-2522

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0896
DESIGNED: May 2025
SEALED: 7/2/2025
REVISED: N/A

ELECTRICAL AND PROGRAMMING
DETAILS FOR:

Seal of the State of North Carolina
Department of Transportation
Division of Signals Management

750 N.Greenfield Pkwy, Garner, NC 27529

Division 3 Onslow County Jacksonville

NC 53 (Western Boulevard)
at
Gateway South

PLAN DATE: May 2025 REVIEWED BY: D. Bennett

PREPARED BY: B. Dowell REVIEWED BY:

REVISIONS

INIT. DATE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL

Seal of the State of North Carolina
Professional Engineer
SEAL 020608
DONALD R. BENNETT II
2CEB3701D4B4FC..

7/2/2025

SIGNATURE DATE

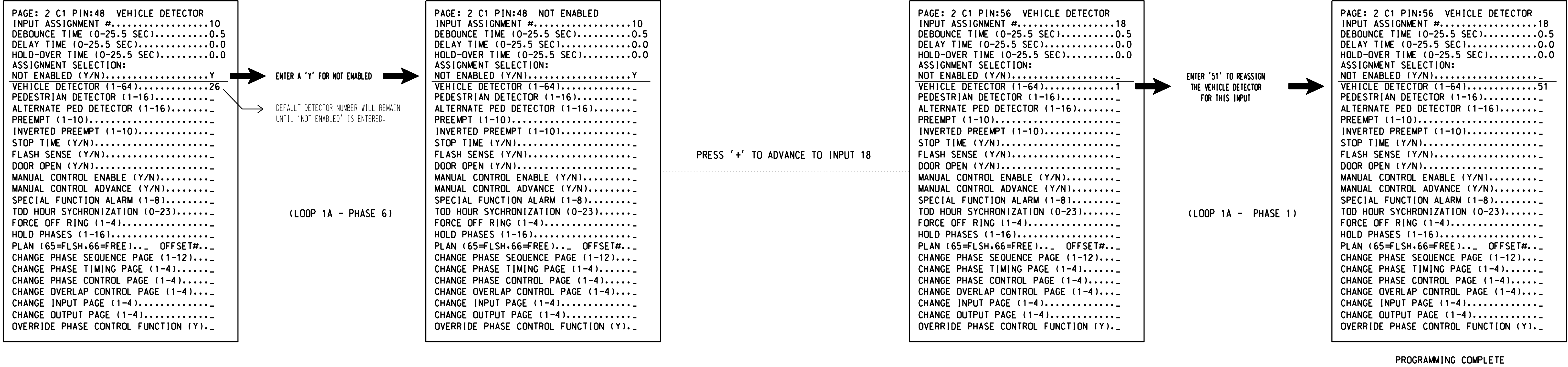
SIG. INVENTORY NO. 03-0896

INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 1A

PROJECT REFERENCE NO.	SHEET NO.
U-5789	Sig. 4.4

- NOTES: 1. THIS PROGRAMMING APPLIES FOR INPUT PAGE 2 ONLY. INPUT PAGE 1 WILL USE STANDARD DEFAULT SETTINGS. THIS PROGRAMMING IS NECESSARY FOR PROPER DETECTOR OPERATION DURING ALTERNATE PHASING OPERATION.
2. THE FIRST TASK THIS PROGRAMMING ACCOMPLISHES IS THE DISABLING OF INPUT #10 (DETECTOR 26) SO THAT A VEHICLE CALL WILL NOT BE PLACED TO PHASE 6 DURING ALTERNATE PHASING OPERATION. THE SECOND TASK THIS PROGRAMMING ACCOMPLISHES IS THAT IT REASSIGNS DETECTOR 51 TO INPUT #18 SO THAT THE DELAY ON LOOP 1A CAN BE REDUCED FROM 15 SECONDS TO 0 SECONDS.

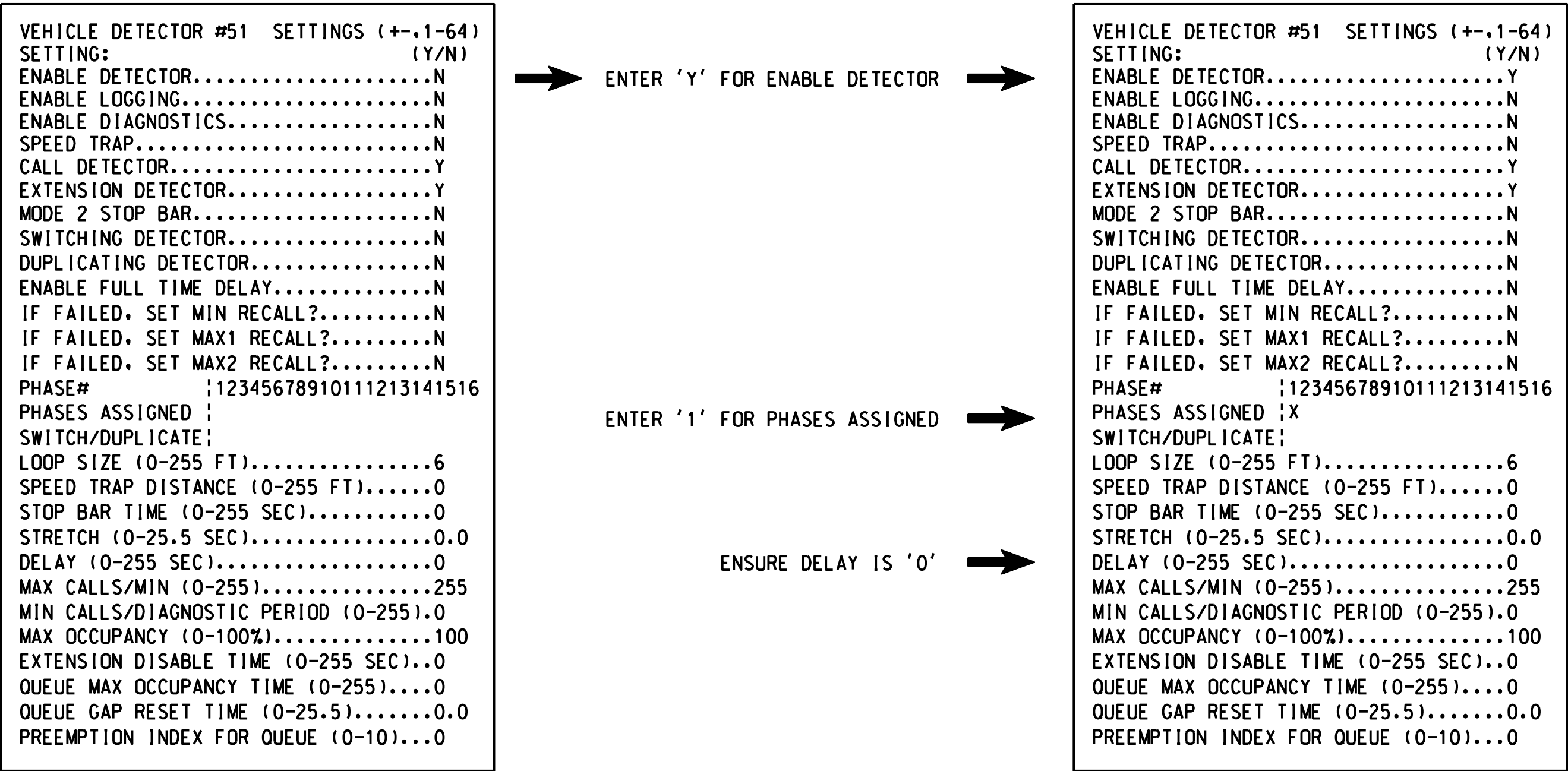
FROM MAIN MENU PRESS '5' (INPUTS). THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 10 IS REACHED.



SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 1A (ALT.)

(program controller as shown below)

FROM MAIN MENU PRESS '7' (DETECTORS). THEN PRESS '1' FOR VEHICLE DETECTORS. PRESS THE '-' KEY TO GET TO VEHICLE DETECTOR #51.



DETECTOR PROGRAMMING COMPLETE

NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1.

Project #: 230907

DAVENPORT

HOME OFFICE:
119 BROOKSTOWN AVE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.5636 www.davenportnc.com
NCBLS FIRM LICENSE NO. C-2522

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0896

DESIGNED: May 2025

SEALED: 7/2/2025

REVISED: N/A

Electrical Details
Final Design - Sheet 3 of 7

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

SEAL 020608

Signature: Donald R. Bennett II

7/2/2025

SIGNATURE DATE

SIG. INVENTORY NO. 03-0896

Division 3 Onslow County Jacksonville

NC 53 (Western Boulevard) at Gateway South

PLAN DATE: May 2025 REVIEWED BY: D. Bennett

PREPARED BY: B. Dowell REVIEWED BY:

REVISIONS INIT. DATE

750 N.Greenfield Hwy., Garner, NC 27529

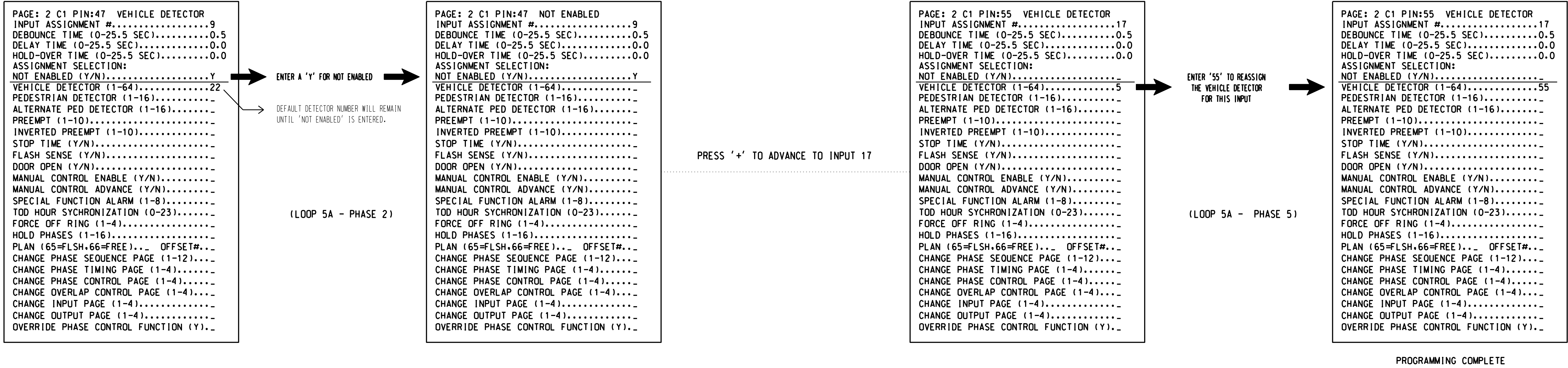
INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 5A

PROJECT REFERENCE NO.	SHEET NO.
U-5789	Sig. 4.5

(program controller as shown below)

- NOTES: 1. THIS PROGRAMMING APPLIES FOR INPUT PAGE 2 ONLY. INPUT PAGE 1 WILL USE STANDARD DEFAULT SETTINGS. THIS PROGRAMMING IS NECESSARY FOR PROPER DETECTOR OPERATION DURING ALTERNATE PHASING OPERATION.
2. THE FIRST TASK THIS PROGRAMMING ACCOMPLISHES IS THE DISABLING OF INPUT #9 (DETECTOR 22) SO THAT A VEHICLE CALL WILL NOT BE PLACED TO PHASE 2 DURING ALTERNATE PHASING OPERATION. THE SECOND TASK THIS PROGRAMMING ACCOMPLISHES IS THAT IT REASSIGNS DETECTOR 55 TO INPUT #17 SO THAT THE DELAY ON LOOP 5A CAN BE REDUCED FROM 15 SECONDS TO 0 SECONDS.

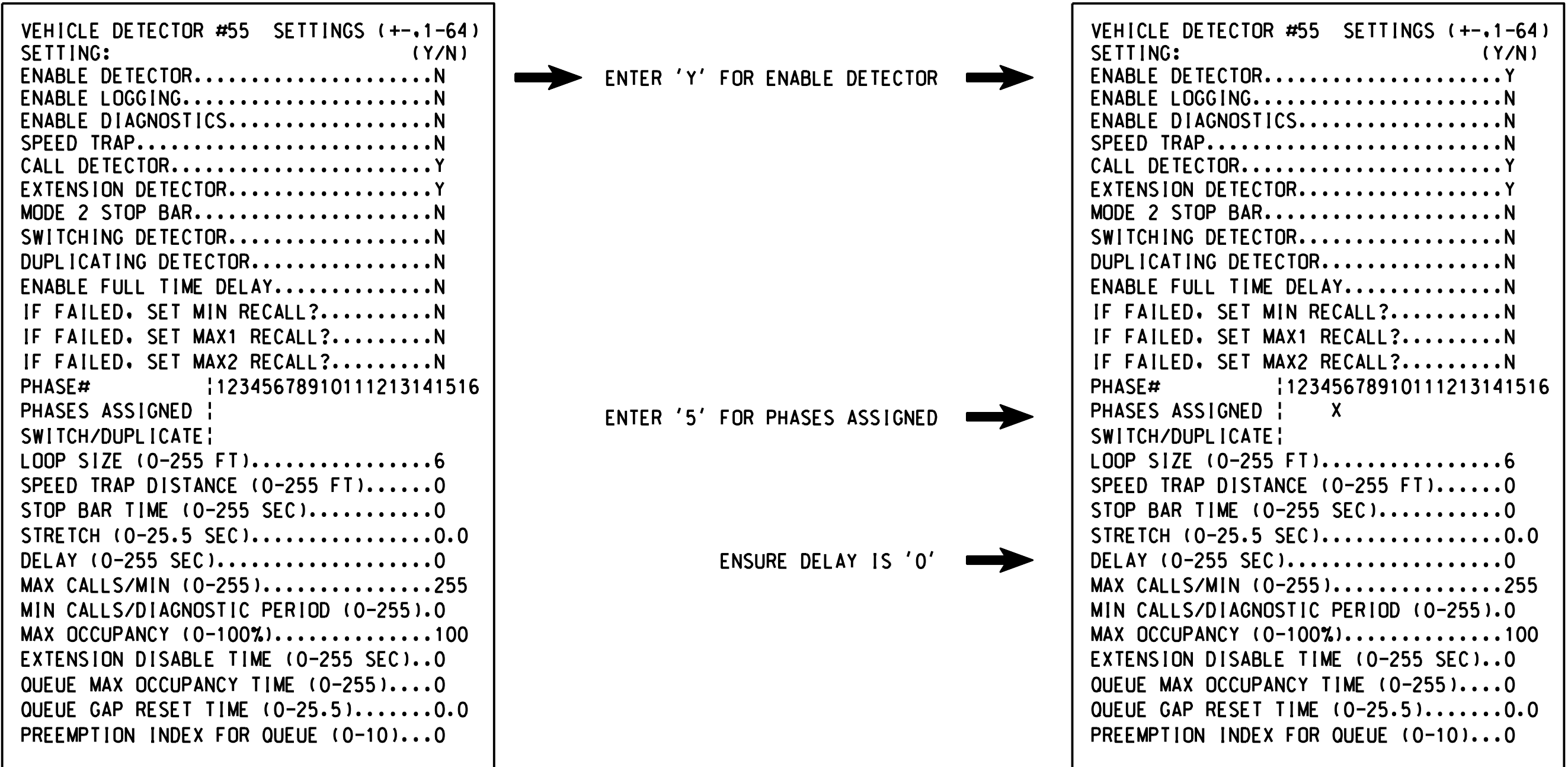
FROM MAIN MENU PRESS '5' (INPUTS). THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 9 IS REACHED.



SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 5A (ALT.)

(program controller as shown below)

FROM MAIN MENU PRESS '7' (DETECTORS). THEN PRESS '1' FOR VEHICLE DETECTORS. PRESS THE '-' KEY TO GET TO VEHICLE DETECTOR #55.



NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1.

DETECTOR PROGRAMMING COMPLETE

Project #: 230907

DAVENPORT

HOME OFFICE:
119 BROOKSTOWN AVE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportnc.com
NCBEL'S FIRM LICENSE NO. C-2522

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0896

DESIGNED: May 2025

SEALED: 7/2/2025

REVISED: N/A

Electrical Details
Final Design - Sheet 4 of 7

ELECTRICAL AND PROGRAMMING DETAILS FOR:	NC 53 (Western Boulevard) at Gateway South		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED SEAL SEAL 020608 ENGINEER Signature: Donald K. Bennett II 2CEB3701D4084FC 7/2/2025 SIGNATURE DATE SIG. INVENTORY NO. 03-0896
	Division 3	Onslow County Jacksonville	
	PLAN DATE: May 2025	REVIEWED BY: D. Bennett	
	PREPARED BY: B. Dowell	REVIEWED BY:	
	REVISIONS	INIT. DATE	

OUTPUT ASSIGNMENTS PROGRAMMING DETAILS
FOR LOAD SWITCH AUX S3 (SIGNAL HEAD 63)

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN
'1' (OUTPUT ASSIGNMENTS),
WITH CURSOR IN "OUTPUT ASSIGNMENT#" POSITION ENTER "45"

```
PAGE:1 C1 PIN:91 NOT ENABLED
OUTPUT ASSIGNMENT #.....45
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)...0
SELECT ASSIGNMENT:
NOT ENABLED.....Y
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....
```

OVERLAP 'E' RED

THE OUTPUT IS SET AS "NOT ENABLED" BY DEFAULT, THIS
"Y" WILL REMAIN UNTIL THE OUTPUT IS CHANGED.

ENTER A "Y" FOR VEHICLE OVERLAP.

```
PAGE:1 C1 PIN:91 NOT ENABLED
SELECT VEHICLE OVERLAP (A=1,P=16)...5
SELECT COLOR(0=RED,1=YEL,2=GRN)....0
```

WHEN A 'Y' IS ENTERED FOR 'VEHICLE OVERLAP'
THE SCREEN SHOWN ABOVE WILL APPEAR.
ENTER DATA AS SHOWN.
PRESS THE 'ENT' KEY AFTER INPUTTING DATA.
THEN 'ESC'.

PRESS "+" KEY FOR OUTPUT 46

```
PAGE:1 C1 PIN:93 NOT ENABLED
OUTPUT ASSIGNMENT #.....46
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)...0
SELECT ASSIGNMENT:
NOT ENABLED.....Y
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....
```

OVERLAP 'E' GREEN

THE OUTPUT IS SET AS "NOT ENABLED" BY DEFAULT, THIS
"Y" WILL REMAIN UNTIL THE OUTPUT IS CHANGED.

ENTER A "Y" FOR VEHICLE OVERLAP.

```
PAGE:1 C1 PIN:93 NOT ENABLED
SELECT VEHICLE OVERLAP (A=1,P=16)...5
SELECT COLOR(0=RED,1=YEL,2=GRN)....2
```

WHEN A 'Y' IS ENTERED FOR 'VEHICLE OVERLAP'
THE SCREEN SHOWN ABOVE WILL APPEAR.
ENTER DATA AS SHOWN.
PRESS THE 'ENT' KEY AFTER INPUTTING DATA.
THEN 'ESC'.

WITH CURSOR IN "OUTPUT ASSIGNMENT#" POSITION ENTER "54"

```
PAGE:1 C1 PIN:101 NOT ENABLED
OUTPUT ASSIGNMENT #.....54
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)...0
SELECT ASSIGNMENT:
NOT ENABLED.....Y
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....Y
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....
```

OVERLAP 'E' YELLOW

ENTER A "Y" FOR VEHICLE OVERLAP.

```
PAGE:1 C1 PIN:101 NOT ENABLED
SELECT VEHICLE OVERLAP (A=1,P=16)...5
SELECT COLOR(0=RED,1=YEL,2=GRN)....1
```

WHEN A 'Y' IS ENTERED FOR 'VEHICLE OVERLAP'
THE SCREEN SHOWN ABOVE WILL APPEAR.
ENTER DATA AS SHOWN.
PRESS THE 'ENT' KEY AFTER INPUTTING DATA.
THEN 'ESC'.

THIS ENTRY IS EXISTING BY DEFAULT.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT
ASSIGNED AS 'VEHICLE OVERLAP' AS SHOWN BELOW.

```
PAGE:1 C1 PIN:91 VEHICLE OVERLAP
OUTPUT ASSIGNMENT #.....45
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)...0
SELECT ASSIGNMENT:
NOT ENABLED.....Y
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....
```

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT
ASSIGNED AS 'VEHICLE OVERLAP' AS SHOWN BELOW.

```
PAGE:1 C1 PIN:93 VEHICLE OVERLAP
OUTPUT ASSIGNMENT #.....46
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)...0
SELECT ASSIGNMENT:
NOT ENABLED.....Y
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....
```

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT
ASSIGNED AS 'VEHICLE OVERLAP' AS SHOWN BELOW.

```
PAGE:1 C1 PIN:101 VEHICLE OVERLAP
OUTPUT ASSIGNMENT #.....54
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)...0
SELECT ASSIGNMENT:
NOT ENABLED.....Y
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....Y
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....
```

OUTPUT PROGRAMMING COMPLETE

OUTPUT ASSIGNMENTS PROGRAMMING DETAILS
FOR LOAD SWITCH AUX S6 (SIGNAL HEAD 23)

(program controller as shown below)

FROM MAIN MENU PRESS '6' (OUTPUTS), THEN
'1' (OUTPUT ASSIGNMENTS),
WITH CURSOR IN "OUTPUT ASSIGNMENT#" POSITION ENTER "37"

```
PAGE:1 C1 PIN:83 NOT ENABLED
OUTPUT ASSIGNMENT #.....37
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)...0
SELECT ASSIGNMENT:
NOT ENABLED.....Y
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....
```

OVERLAP 'F' RED

THE OUTPUT IS SET AS "NOT ENABLED" BY DEFAULT, THIS
"Y" WILL REMAIN UNTIL THE OUTPUT IS CHANGED.

ENTER A "Y" FOR VEHICLE OVERLAP.

```
PAGE:1 C1 PIN:91 NOT ENABLED
SELECT VEHICLE OVERLAP (A=1,P=16)...6
SELECT COLOR(0=RED,1=YEL,2=GRN)....0
```

WHEN A 'Y' IS ENTERED FOR 'VEHICLE OVERLAP'
THE SCREEN SHOWN ABOVE WILL APPEAR.
ENTER DATA AS SHOWN.
PRESS THE 'ENT' KEY AFTER INPUTTING DATA.
THEN 'ESC'.

PRESS "+" KEY FOR OUTPUT 38

```
PAGE:1 C1 PIN:84 NOT ENABLED
OUTPUT ASSIGNMENT #.....38
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)...0
SELECT ASSIGNMENT:
NOT ENABLED.....Y
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....
```

OVERLAP 'F' GREEN

THE OUTPUT IS SET AS "NOT ENABLED" BY DEFAULT, THIS
"Y" WILL REMAIN UNTIL THE OUTPUT IS CHANGED.

ENTER A "Y" FOR VEHICLE OVERLAP.

```
PAGE:1 C1 PIN:93 NOT ENABLED
SELECT VEHICLE OVERLAP (A=1,P=16)...6
SELECT COLOR(0=RED,1=YEL,2=GRN)....2
```

WHEN A 'Y' IS ENTERED FOR 'VEHICLE OVERLAP'
THE SCREEN SHOWN ABOVE WILL APPEAR.
ENTER DATA AS SHOWN.
PRESS THE 'ENT' KEY AFTER INPUTTING DATA.
THEN 'ESC'.

WITH CURSOR IN "OUTPUT ASSIGNMENT#" POSITION ENTER "53"

```
PAGE:1 C1 PIN:100 NOT ENABLED
OUTPUT ASSIGNMENT #.....53
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)...0
SELECT ASSIGNMENT:
NOT ENABLED.....Y
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....
```

OVERLAP 'F' YELLOW

THE OUTPUT IS SET AS "NOT ENABLED" BY DEFAULT, THIS
"Y" WILL REMAIN UNTIL THE OUTPUT IS CHANGED.

ENTER A "Y" FOR VEHICLE OVERLAP.

```
PAGE:1 C1 PIN:101 NOT ENABLED
SELECT VEHICLE OVERLAP (A=1,P=16)...6
SELECT COLOR(0=RED,1=YEL,2=GRN)....1
```

WHEN A 'Y' IS ENTERED FOR 'VEHICLE OVERLAP'
THE SCREEN SHOWN ABOVE WILL APPEAR.
ENTER DATA AS SHOWN.
PRESS THE 'ENT' KEY AFTER INPUTTING DATA.
THEN 'ESC'.

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT
ASSIGNED AS 'VEHICLE OVERLAP' AS SHOWN BELOW.

```
PAGE:1 C1 PIN:83 VEHICLE OVERLAP
OUTPUT ASSIGNMENT #.....37
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)...0
SELECT ASSIGNMENT:
NOT ENABLED.....Y
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....
```

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT
ASSIGNED AS 'VEHICLE OVERLAP' AS SHOWN BELOW.

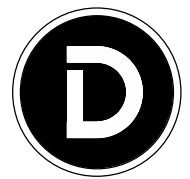
```
PAGE:1 C1 PIN:84 VEHICLE OVERLAP
OUTPUT ASSIGNMENT #.....38
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)...0
SELECT ASSIGNMENT:
NOT ENABLED.....Y
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....
```

DISPLAY WILL NOW SHOW THE SPECIFIED OUTPUT
ASSIGNED AS 'VEHICLE OVERLAP' AS SHOWN BELOW.

```
PAGE:1 C1 PIN:100 VEHICLE OVERLAP
OUTPUT ASSIGNMENT #.....53
FREQUENCY (0=DEFAULT) (0-25.5 HZ)...0.0
DUTY CYCLE (0=DEFAULT) (0 - 100%)...0
MODE (0=SOLID,1=FLASH)...0
SELECT ASSIGNMENT:
NOT ENABLED.....Y
VEHICLE PHASE.....
PEDESTRIAN PHASE.....
VEHICLE OVERLAP.....Y
PEDESTRIAN OVERLAP.....
WATCHDOG.....
DETECTOR RESET.....
ADVANCE BEACON.....
OUT OF PHASE FLASHER.....
CONTROLLER FLASH.....
RUN FREE.....
RESERVED.....
PREEMPT.....
SOFT PREEMPT.....
ANY PREEMPT.....
COORDINATION PLAN.....
OFFSET.....
PHASE CHECK.....
PHASE ON.....
PHASE NEXT.....
```

OUTPUT PROGRAMMING COMPLETE

Project #: 230907



DAVENPORT

HOME OFFICE:
119 BROOKSTOWN AVE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.8538 www.davenportnc.com
NCBELS FIRM LICENSE NO. C-2522

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0896
DESIGNED: May 2025
SEALED: 7/2/2025
REVISED: N/A

Electrical Details
Final Design - Sheet 5 of 7

ELECTRICAL AND PROGRAMMING
DETAILS FOR:



750 N.Greenfield Pkwy, Garner, NC 27529

NC 53 (Western Boulevard)
at
Gateway South

Division 3 Onslow County Jacksonville

PLAN DATE: May 2025 REVIEWED BY: D. Bennett

PREPARED BY: B. Dowell REVIEWED BY:

REVISIONS INIT. DATE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SEAL



7/2/2025

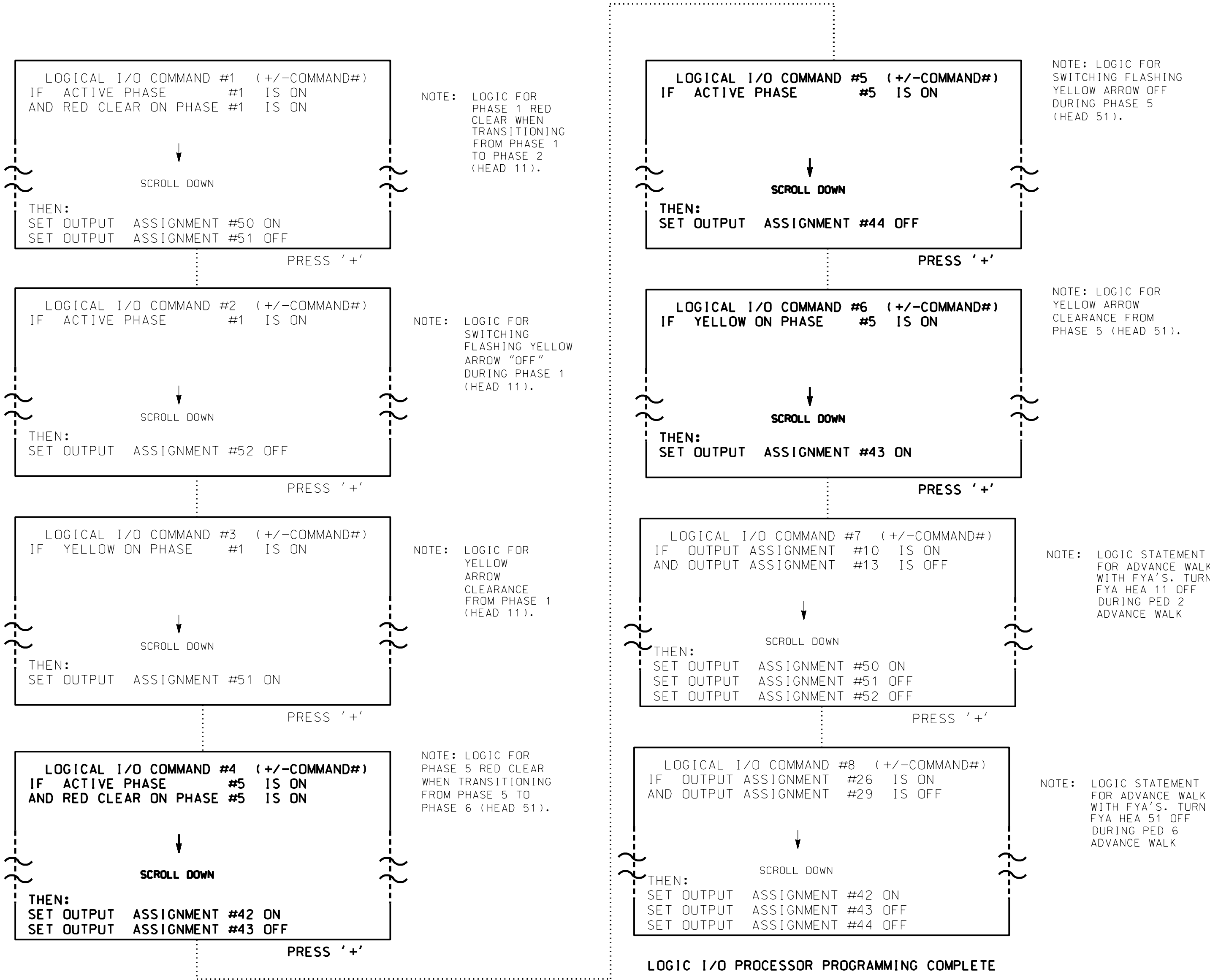
SIGNATURE DATE

SIG. INVENTORY NO. 03-0896

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL
TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, 3, 4, 5, 6, 7, AND 8.
2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).



OUTPUT REFERENCE SCHEDULE

USE TO INTERPRET LOGIC PROCESSOR

OUTPUT 10 = Phase 2 WALK
OUTPUT 13 = Phase 2 Green
OUTPUT 26 = Phase 6 WALK
OUTPUT 29 = Phase 6 Green
OUTPUT 42 = Overlap C Red
OUTPUT 43 = Overlap C Yellow
OUTPUT 44 = Overlap C Green
OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING COORDINATION - SELECT ALL PAGE CHANGES (AS SHOWN BELOW) WITHIN COORDINATION PLAN PROGRAMMING.

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM PAGE CHANGES (SHOWN BELOW) IN SEPARATE TIME OF DAY EVENTS. IF PAGE 1 IS USED, NO EVENT PROGRAMMING IS NECESSARY FOR THAT PARTICULAR PAGE.

PHASING	INPUTS PAGE	OVERLAPS PAGE
ACTIVE PAGES REQUIRED TO RUN <u>DEFAULT PHASING</u>	1	1
ACTIVE PAGES REQUIRED TO RUN <u>ALTERNATE PHASING</u>	2	2

NOTE: PAGES NOT SHOWN (i.e. sequence, phase control, etc.) SHOULD REMAIN AS '1', OR AS DEFINED BY TIMING ENGINEER.

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY PAGE CHANGE EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN PAGE CHANGE EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

ALTERNATE PHASING PAGE CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN THESE OVERLAP/INPUT PAGE CHANGES ACTIVATE TO CALL THE "ALTERNATE PHASING":

OVERLAPS PAGE 2: Modifies overlap parent phases for heads 11 and 51 to run protected turns only.

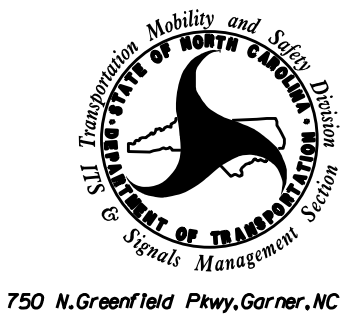
INPUTS PAGE 2: Disables phase 6 call on loop 1A and reduces delay time for phase 1 call on loop 1A to 0 seconds.

Disables phase 2 call on loop 5A and reduces delay time for phase 5 call on loop 5A to 0 seconds.

Project #: 230907
Electrical Details
Final Design - Sheet 6 of 7



THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0896
DESIGNED: May 2025
SEALED: 7/2/2025
REVISED: N/A



NC 53 (Western Boulevard)
at
Gateway South

Division 3 Onslow County Jacksonville

PLAN DATE: May 2025 REVIEWED BY: D. Bennett

PREPARED BY: B. Dowell REVIEWED BY:

REVISIONS INIT. DATE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

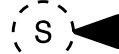
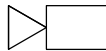
SEAL
NORTH CAROLINA
PROFESSIONAL
SEAL
020608
ENGINEER
DONALD B. BENNETT II
20CB3701D4D84FC
7/2/2025
SIGNATURE DATE
SIG. INVENTORY NO. 03-0896

PROJECT REFERENCE NO.	SHEET NO.
U-5789	SCP-1

1	INSTALL COAX CABLE
2	INSTALL ETHERNET CABLE
3	EXISTING ETHERNET (OR COAX) CABLE
4	INSTALL SMFO CABLE
5	EXISTING SMFO CABLE
6	INSTALL DROP CABLE
7	INSTALL TRACER WIRE
8	TRENCH
9	INSTALL PVC CONDUIT
10	INSTALL RIGID, GALVANIZED STEEL CONDUIT
11	INSTALL RIGID, GALVANIZED STEEL RISER WITH WEATHERHEAD
12	INSTALL RIGID, GALVANIZED STEEL RISER WITH FIBER OPTIC CABLE SEAL
13	INSTALL OUTER-DUCT POLYETHYLENE CONDUIT
14	INSTALL POLYETHYLENE CONDUIT
15	DIRECTIONAL DRILL CONDUIT
16	BORE AND JACK CONDUIT
17	INSTALL CABLE(S) IN EXISTING CONDUIT
18	INSTALL CABLE(S) IN NEW CONDUIT
19	INSTALL CABLE(S) IN EXISTING RISER
20	INSTALL CABLE(S) IN NEW RISER
21	INSTALL CABLE(S) IN EXISTING CONDUIT STUB-OUTS
22	INSTALL NEW CONDUIT INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
23	INSTALL NEW RISER INTO EXISTING CABINET BASE (USE EXISTING CONDUIT STUB-OUTS WHEN AVAILABLE)
24	INSTALL NEW CONDUIT INTO EXISTING POLE MOUNTED CABINET
25	INSTALL NEW RISER INTO EXISTING POLE MOUNTED CABINET
26	INSTALL NEW ETHERNET EDGE SWITCH
27	INSTALL NEW FIBER OPTIC TRANSCEIVER
28	INSTALL INTERCONNECT CENTER, PATCH PANEL, JUMPERS AND FUSION SPLICE CABLE IN CABINET
29	INSTALL UNDERGROUND SPLICE ENCLOSURE
30	INSTALL AERIAL SPLICE ENCLOSURE
31	MODIFY EXISTING INTERCONNECT CENTER /SPLICE ENCLOSURE
32	INSTALL POLE MOUNTED SPLICE CABINET
33	INSTALL BASE MOUNTED SPLICE CABINET

34	INSTALL CABINET FOUNDATION
35	INSTALL CCTV CAMERA POLE MOUNTED CABINET
36	INSTALL CCTV CAMERA ASSEMBLY
37	INSTALL CCTV CAMERA WOOD POLE
38	INSTALL CCTV CAMERA METAL POLE AND FOUNDATION
39	INSTALL JUNCTION BOX
40A	INSTALL OVERSIZED JUNCTION BOX
40B	INSTALL SPECIAL OVERSIZED JUNCTION BOX (36" x 24" x 24")
41	REMOVE EXISTING JUNCTION BOX
42	INSTALL WOOD POLE
43	REMOVE EXISTING WOOD POLE
44	INSTALL AERIAL GUY ASSEMBLY
45	INSTALL STANDARD GUY ASSEMBLY
46	INSTALL SIDEWALK GUY ASSEMBLY
47	INSTALL MESSENGER CABLE
48A	REMOVE EXISTING COMMUNICATIONS AND MESSENGER CABLE
48B	REMOVE EXISTING COMMUNICATIONS CABLE
48C	REMOVE EXISTING MESSENGER
49	BACK PULL EXISTING COMMUNICATIONS CABLE
50	INSTALL CELL MODEM AND ANTENNA
51	INSTALL CABLE STORAGE RACKS (SNOW SHOES) AND STORE 100 FEET OF CABLE
52A	INSTALL DELINEATOR MARKER
52B	INSTALL JUNCTION BOX MARKER
53A	STORE 20 FEET OF COMMUNICATIONS CABLE
53B	STORE 50 FEET OF EACH COMMUNICATIONS CABLE
54	LASH CABLE(S) TO EXISTING COMMUNICATIONS CABLE
55	LASH CABLE(S) TO EXISTING MESSENGER CABLE
56	LASH CABLE(S) TO NEW MESSENGER CABLE
57	MODIFY EXISTING ELECTRICAL SERVICE
58	INSTALL NEW ELECTRICAL SERVICE
59	INSTALL NEW EQUIPMENT CABINET DISCONNECT
60	BOND TRACER WIRE TO EQUIPMENT GROUND BUS
61	DO NOT BOND TRACER WIRE TO EQUIPMENT GROUND BUS
62	BOND RISER AND MESSENGER CABLE TO POLE GROUND
63	BOND RISER TO POLE GROUND
64	BOND MESSENGER CABLE TO POLE GROUND
65	INSTALL HEAT SHRINK TUBING RETROFIT KIT
66	INSTALL MOLDABLE DUCT SEAL
67	SLACK SPAN

<u>LEGEND</u>	
	NEW FIBER OPTIC COMMUNICATIONS CABLE
	EXISTING COMMUNICATIONS CABLE
	EXISTING COMMUNICATIONS CABLE TO BE REMOVED
	NEW AERIAL GUY ASSEMBLY
	NEW CONDUIT
	EXISTING CONDUIT
	NEW DIRECTIONAL DRILLED CONDUIT

<u>NEW</u>		<u>EXISTING</u>
	OVERSIZED JUNCTION BOX	
	WOOD POLE	
	AERIAL SPLICE ENCLOSURE	
	UNDERGROUND SPLICE ENCLOSURE	
	METAL POLE	
	CCTV ASSEMBLY	
	STANDARD GUY ASSEMBLY	
	SIDEWALK GUY ASSEMBLY	
	CABLE STORAGE RACKS (SNOW SHOES)	
	SIGNAL/EQUIPMENT CABINET	
	SPLICE CABINET	
SP	SIGNAL POLE	SP
XX-XXXX	SIGNAL INVENTORY NUMBER	XX-XXXX

CONSTRUCTION NOTE SYMBOLOGY KEY

Legend for the Cable Schedule Diagram:

- XX** (in a rounded rectangle): INDICATES NUMBER OF CABLES, LOOPS, ETC.
- XX** (in a circle): INDICATES NUMBER OF FIBERS PER CABLE, TWISTED PAIRS PER CABLE, ETC.
- XX** (in a triangle pointing right): INDICATES NUMBER OF RISER(S)/CONDUIT(S)
- XX** (in a triangle pointing left): INDICATES DIAMETER OF RISER(S)/CONDUIT(S) (INCH)

Diagram Components and Labels:

- NUMBER OF CABLE(S)**: Points to the left 'XX' in the rounded rectangle.
- NUMBER OF FIBER/TWISTED PAIRS**: Points to the right 'XX' in the rounded rectangle.
- NEW/EXISTING CABLE**: Points to the top triangle.
- REMOVE/MODIFY CABLE**: Points to the bottom triangle.
- CONDUIT/RISER**: Points to the circle.
- NUMBER OF RISER(S)/CONDUIT(S)**: Points to the left triangle pointing right.
- DIAMETER OF RISER(S)/CONDUIT(S) (INCH)**: Points to the right triangle pointing left.

ATTACHMENT POINT:

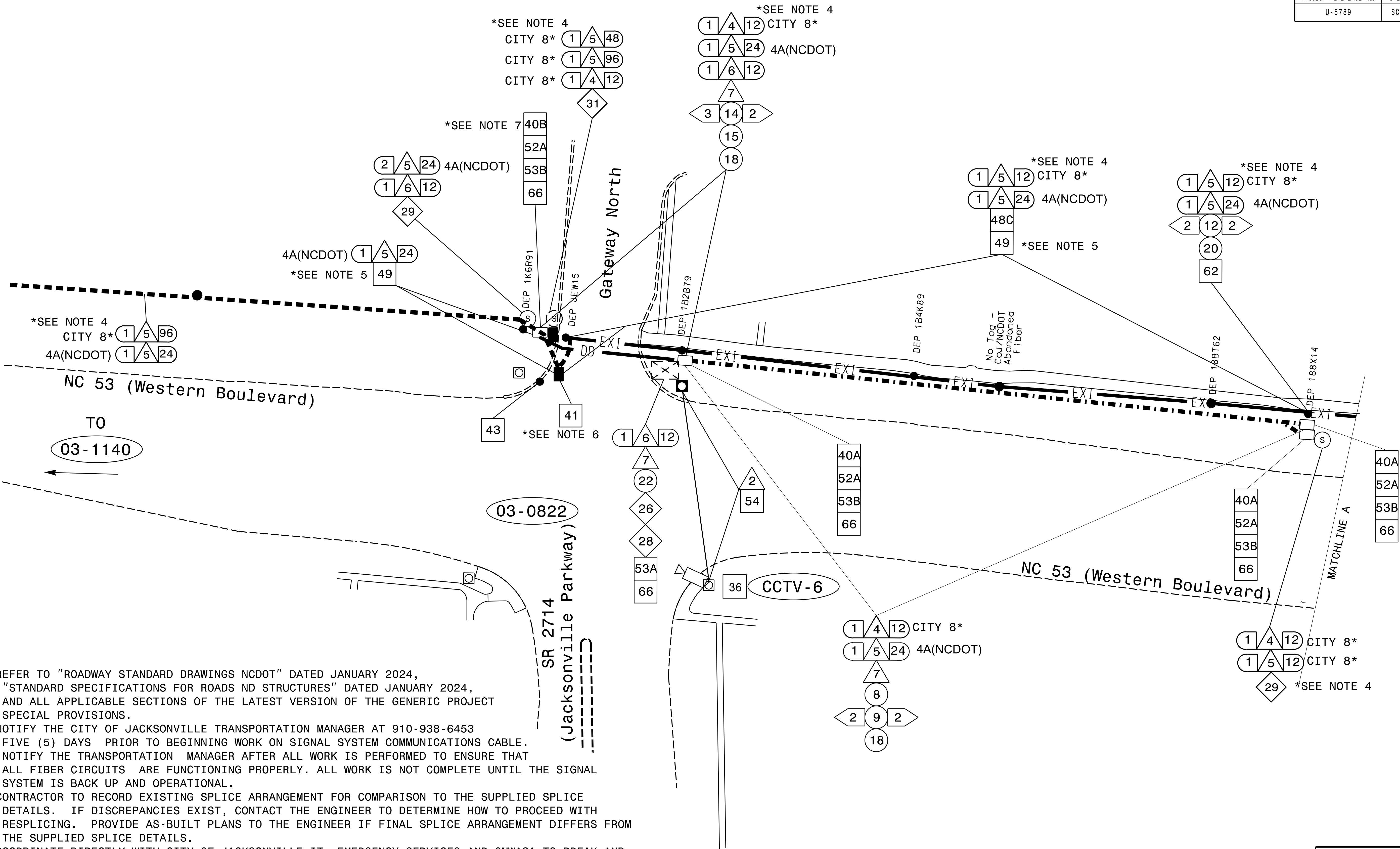
	DISTANCE ABOVE (IN)/ATTACHMENT POINT REFERENCE POINT
	REFERENCE POINT DISTANCE BELOW (IN)/ATTACHMENT POINT

"SS" REFERENCE LOCATION	
FS =	FRONT SIDE OF POLE
BS =	BACK SIDE OF POLE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

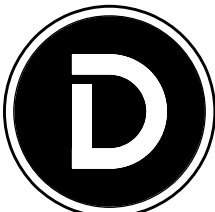
	Jacksonville Signal System Communication Cable and Conduit Routing Plan			SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 020608	
	Division 3		Onslow County	Jacksonville	
	PLAN DATE:	May 2025	REVIEWED BY:	D. Bennett	
	PREPARED BY:	B. Dowell	REVIEWED BY:	<i>(Signature)</i>	
	REVISIONS		INIT.	DATE	
750 N.Greenfield Pkwy,Garner,NC 27529 ZCE83701D408AFC..... 7/2/2025 _____ SIGNATURE DATE SIG.: INVENTORY NO.					

PROJECT REFERENCE NO.	SHEET NO.
U-5789	SCP-2



NOTES:

1. REFER TO "ROADWAY STANDARD DRAWINGS NCDOT" DATED JANUARY 2024, "STANDARD SPECIFICATIONS FOR ROADS ND STRUCTURES" DATED JANUARY 2024, AND ALL APPLICABLE SECTIONS OF THE LATEST VERSION OF THE GENERIC PROJECT SPECIAL PROVISIONS.
2. NOTIFY THE CITY OF JACKSONVILLE TRANSPORTATION MANAGER AT 910-938-6453 FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM COMMUNICATIONS CABLE. NOTIFY THE TRANSPORTATION MANAGER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. ALL WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.
3. CONTRACTOR TO RECORD EXISTING SPLICE ARRANGEMENT FOR COMPARISON TO THE SUPPLIED SPLICE DETAILS. IF DISCREPANCIES EXIST, CONTACT THE ENGINEER TO DETERMINE HOW TO PROCEED WITH RESPLICING. PROVIDE AS-BUILT PLANS TO THE ENGINEER IF FINAL SPLICE ARRANGEMENT DIFFERS FROM THE SUPPLIED SPLICE DETAILS.
4. COORDINATE DIRECTLY WITH CITY OF JACKSONVILLE IT, EMERGENCY SERVICES AND ONWASA TO BREAK AND BACKPULL THE CITY 8 - 96 AND 12 FIBERS BETWEEN THE EXISTING SPLICE AND PULL BOX NORTH OF DEP 1K6R91 AND DEP 188X14. BE AWARE THAT THE 96 FIBER COMING FROM THE NORTH PASSES THROUGH THE 03-0822 FIBER PULL BOX.
5. BREAK SPLICES AT EXISTING JUNCTION BOX FOR 03-0822 AND BACKPULL THE SOUTHERN FIBER TO DEP 188X14. BACKPULL THE NORTHERN FIBER TO A NEW PULL BOX INTERCEPTING THE UNDERGROUND CONDUIT APPROXIMATELY 10-15' NORTH OF DEP 1K6R91.
6. AFTER BACK PULLING THE EXISTING FIBER OPTIC CABLE, CUT THE EXISTING CONDUITS AT 30" BELOW GRADE, REMOVE THE EXSITING JUNCTION BOX, AND FILL VOID WITH APPROVED MATERIALS.
7. THE NEW OVERSIZED PULL BOX INSTALLED NORTH OF DEP 1K6R91 IS IN A FILL SECTION. COORDINATE TO SET PULL BOX NEAR FINAL GRADE ELEVATION.



DAVENPORT

HOME OFFICE:
119 BROOKTOWN AVENUE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportworld.com
NCBELS FIRM LICENSE NO. C-2522

Project #: 230907



750 N. Greenfield Pkwy, Garner, NC 27529

Jacksonville
Signal System
Communication Cable and
Conduit Routing Plan

Division 3 Onslow County Jacksonville

PLAN DATE: May 2025 REVIEWED BY: D. Bennett

PREPARED BY: B. Dowell REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

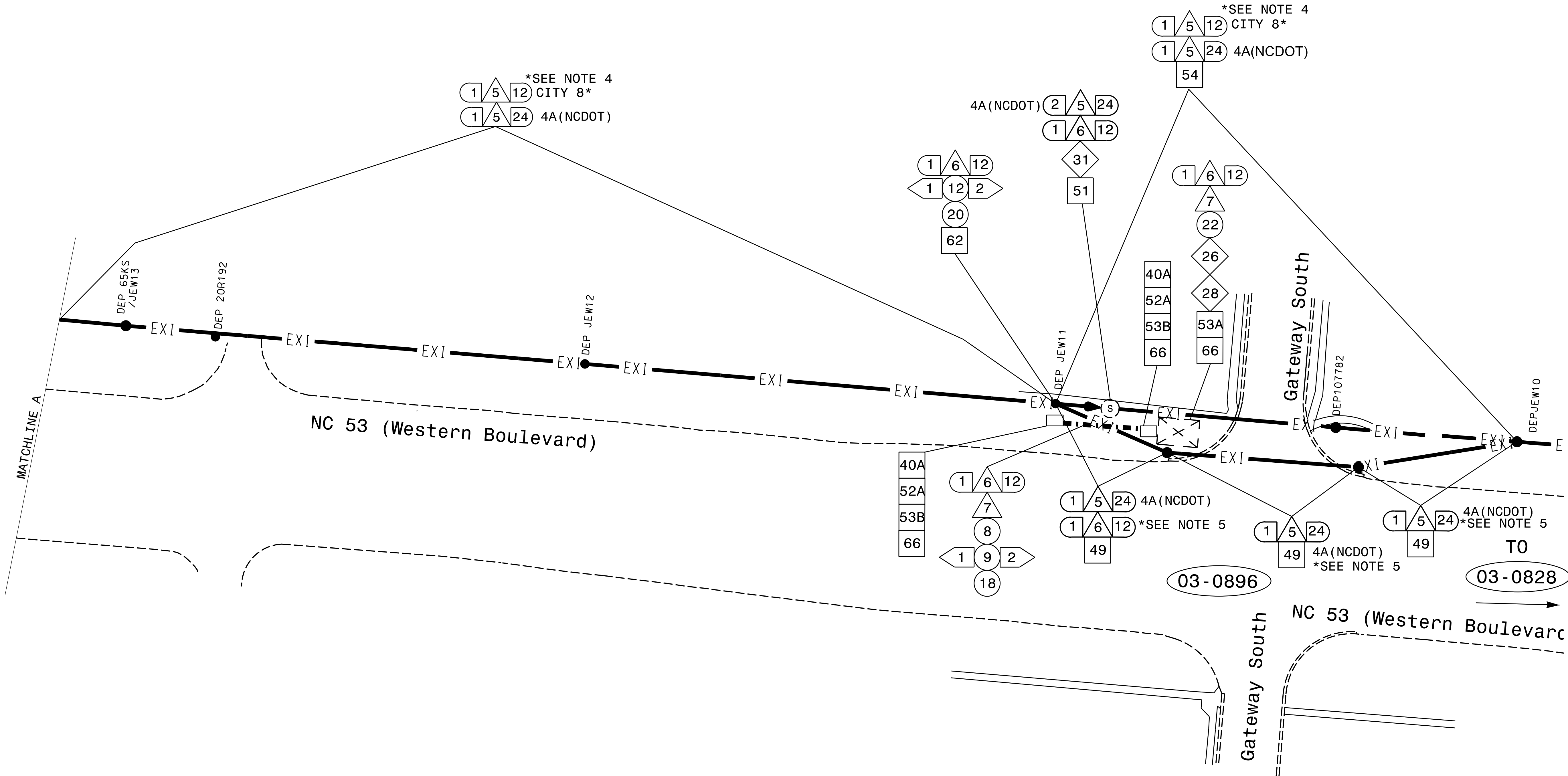
SEAL



Signature: *Donald R. Bennett II*
20C83701040B4FC...

SIGNATURE DATE

SIG. INVENTORY NO.



- NOTES:
1. REFER TO "ROADWAY STANDARD DRAWINGS NCDOT" DATED JANUARY 2024, "STANDARD SPECIFICATIONS FOR ROADS ND STRUCTURES" DATED JANUARY 2024, AND ALL APPLICABLE SECTIONS OF THE LATEST VERSION OF THE GENERIC PROJECT SPECIAL PROVISIONS.
 2. NOTIFY THE CITY OF JACKSONVILLE TRANSPORTATION MANAGER AT 910-938-6453 FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM COMMUNICATIONS CABLE. NOTIFY THE TRANSPORTATION MANAGER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. ALL WORK IS NOT COMPLETE UNTIL THE SIGNAL SYSTEM IS BACK UP AND OPERATIONAL.
 3. CONTRACTOR TO RECORD EXISTING SPLICE ARRANGEMENT FOR COMPARISON TO THE SUPPLIED SPLICE DETAILS. IF DISCREPANCIES EXIST, CONTACT THE ENGINEER TO DETERMINE HOW TO PROCEED WITH RESPLICING. PROVIDE AS-BUILT PLANS TO THE ENGINEER IF FINAL SPLICE ARRANGEMENT DIFFERS FROM THE SUPPLIED SPLICE DETAILS.
 4. CITY OF JACKSONVILLE FIBER ROUTE 8(IT FIBER) SHOWN FOR REFERENCE AND COORDINATION ONLY. NO NCDOT WORK REQUIRED ON JACKSONVILLE IT FIBER THIS SHEET.
 5. BREAK SPLICES IN EXISTING AREAL SPLICE ENCLOSURE AND BACKPULL TO DEP JEW10, RELASH TO EXISTING JACKSONVILLE IT FIBER BACK TO THE EXISTING SPLICE ENCLOSURE AND RECONNECT SPLICES.

Project #: 230907

DAVENPORT

HOME OFFICE:
119 BROOKTOWN AVENUE, SUITE PH1
WINSTON-SALEM, NC 27101
336.744.1636 www.davenportworld.com
NCBELS FIRM LICENSE NO. C-2522

750 N. Greenfield Pkwy, Garner, NC 27529

Jacksonville
Signal System
Communication Cable and
Conduit Routing Plan

Division 3 Onslow County Jacksonville

PLAN DATE: May 2025 REVIEWED BY: D. Bennett

PREPARED BY: B. Dowell REVIEWED BY:

REVISIONS	INIT.	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SEAL

SEAL 020608

SIGNATURE: Donald R. Bennett II

DATE: 7/2/2025

SIG. INVENTORY NO.

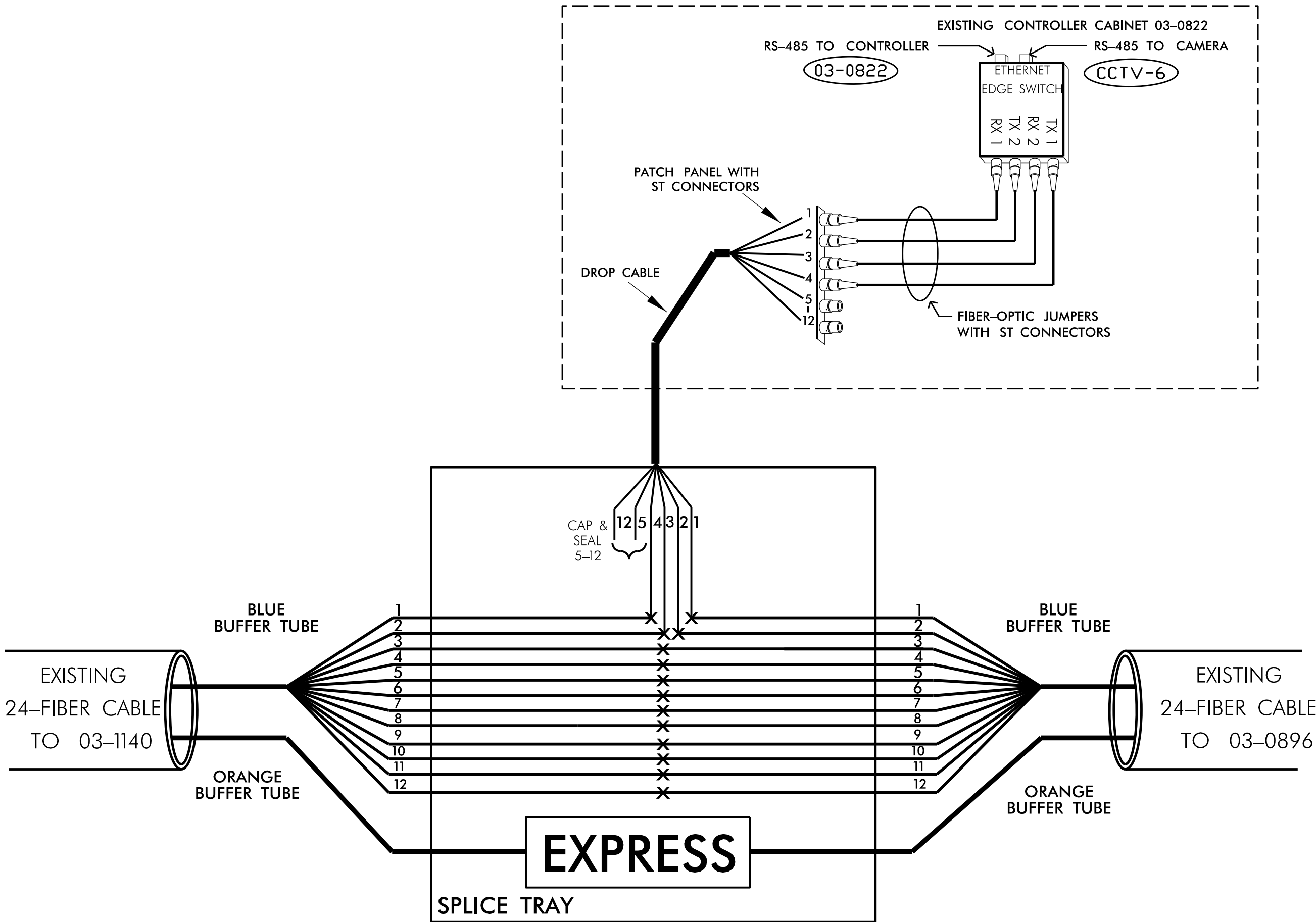
New Underground Splice Enclosure at 03-0822/New CCTV6

INTERSECTION LOCATION
NC53(WESTERN BOULEVARD)
AT GATEWAY NORTH/JACKSONVILLE
PARKWAY(03-0822) & CCTV 6

COLOR CODE
TIA/EIA 598-A

LEGEND
X = FUSION SPICE

- | | |
|------------|-----------------|
| (1) BLUE | (7) RED |
| (2) ORANGE | (8) BLACK |
| (3) GREEN | (9) YELLOW |
| (4) BROWN | (10) VIOLET |
| (5) SLATE | (11) ROSE(PINK) |
| (6) WHITE | (12) AQUA |



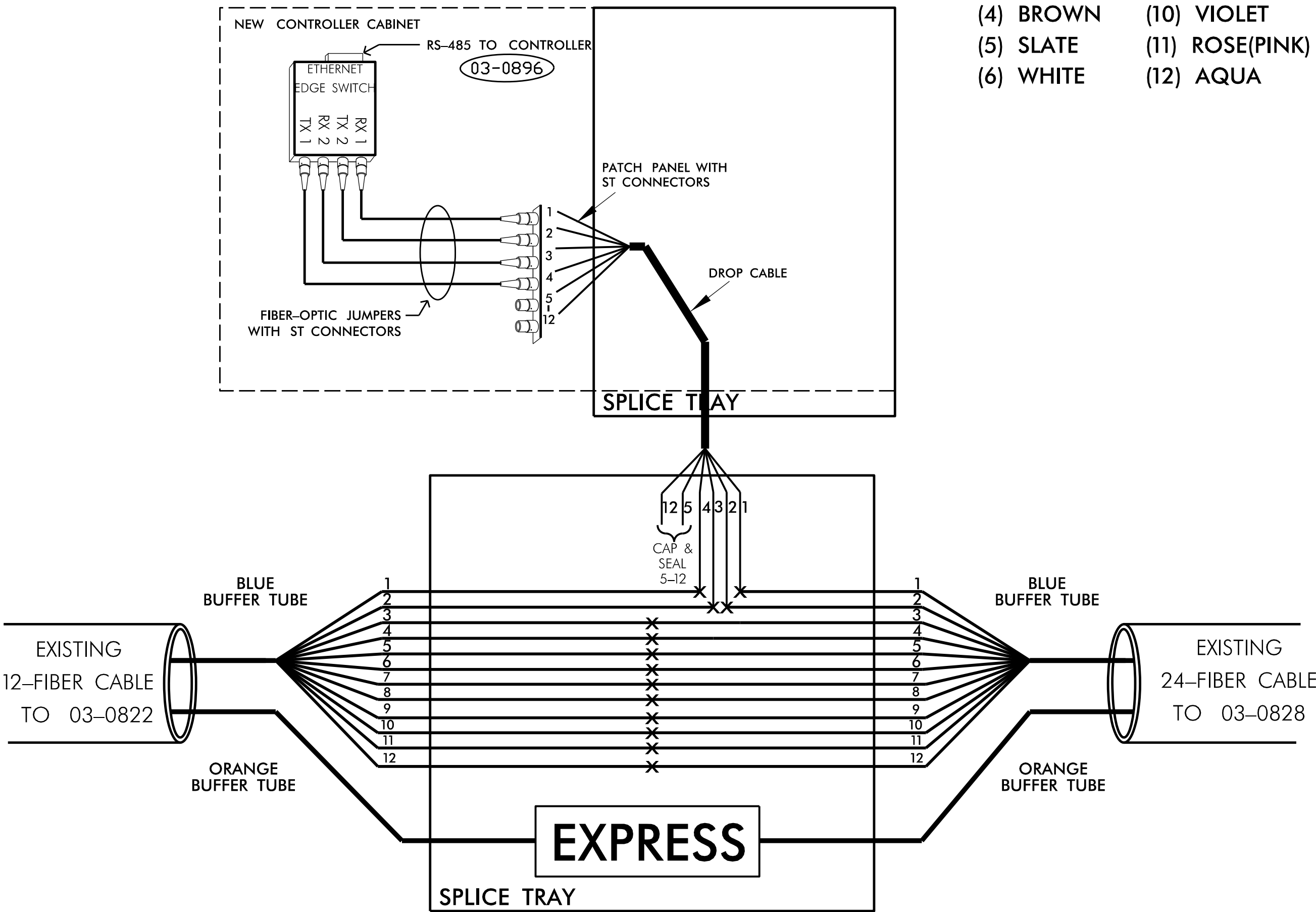
Existing Aerial Splice Enclosure
at Gateway South

INTERSECTION LOCATION
NC 53(WESTERN BLVD)
AT GATEWAY SOUTH
SIG. INV. # 03-0896

LEGEND
X = FUSION SPICE

COLOR CODE
TIA/EIA 598-A

- | | |
|------------|-----------------|
| (1) BLUE | (7) RED |
| (2) ORANGE | (8) BLACK |
| (3) GREEN | (9) YELLOW |
| (4) BROWN | (10) VIOLET |
| (5) SLATE | (11) ROSE(PINK) |
| (6) WHITE | (12) AQUA |



NOTES:

- 1) NOTIFY THE CITY OF JACKSONVILLE TRANSPORTATION MANAGER AT (910)938-6453 FIVE (5) DAYS PRIOR TO BEGINNING WORK ON SIGNAL SYSTEM COMMUNICATIONS CABLE. NOTIFY THE ITS ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL FIBER CIRCUITS ARE FUNCTIONING PROPERLY. ALL WORK IS NOT COMPLETE UNTIL THE SIGNAL IS BACK UP AND OPERATIONAL.
- 2) CONTRACTOR TO RECORD EXISTING SPLICE ARRANGEMENT FOR COMPARISON TO THE SUPPLIED SPLICE DETAILS. IF DISCREPANCIES EXIST, CONTACT THE ENGINEER TO DETERMINE HOW TO PROCEED WITH RESPLICING. PROVIDE AS-BUILT PLANS TO THE ENGINEER IF FINAL SPLICE ARRANGEMENT DIFFERS FROM THE SUPPLIED SPLICE DETAILS.
- 3) ETHERNET SWITCH TERMINATION CONFIGURATIONS ARE GENERIC. CONTRACTOR IS RESPONSIBLE FOR DETERMINING ENSURING PROPER TERMINATIONS.
- 4) INCLUDE ON THE COVER OF EACH SPLICE TRAY THE FOLLOWING:
REFERENCE SECTION 1731 "FIBER OPTIC SPLICE ENCLOSURE"

- 1)SPLICE LOCATION
- 2)DATE
- 3)COMPANY NAME
- 4)NAME OF INDIVIDUAL PERFORMING THE SPLICING

PRIOR TO INSTALLING THE COVER ON THE SPLICE TRAY TAKE A DIGITAL PHOTOGRAPH SHOWING THE SPLICE TRAY AND INFORMATION SHOWN ABOVE (1-4) AND SUBMIT PHOTOGRAPH ALONG WITH OTDR TEST RESULTS.



FIBER OPTIC SPLICE DETAIL FOR:		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
		SEAL	
Jacksonville Signal System Splice Detail		SEAL 020608 ENGINEER DONALD R. BENNETT II	
Division 3 Onslow County Jacksonville		7/2/2025	
PLAN DATE: April 2025 REVIEWED BY: D. Bennett		SIGNATURE DATE	
PREPARED BY: J. Dollarhite REVIEWED BY:			
REVISIONS		INIT. DATE	